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Original Article

Cloud-Native Architectures for Scalable Wealth Proposal Platforms

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Abstract - Wealth management in the United States is evolving at a rapid pace, with technology platforms becoming the backbone of advisor-client interactions. Advisors are expected to generate highly personalized proposals that integrate client goals, portfolio strategies, tax considerations, and compliance checks in near real time. Legacy monolithic platforms struggle to meet these requirements due to scalability bottlenecks, limited data integration, and high infrastructure costs. This paper presents a practical framework for building a cloud-native proposal generation platform using Amazon Web Services (AWS). The architecture leverages microservices, container orchestration, event-driven data pipelines, and modern security controls to deliver scalable, compliant, and resilient solutions. The discussion includes industry context, architectural details, performance outcomes, compliance alignment, and a case example from a U.S. wealth advisory platform. The paper concludes with future directions, including generative technologies, explainable AI, and ESG integration, which will shape the next generation of proposal platforms.

Keywords - Wealth management, proposal generation, cloud-native, AWS, microservices, scalability, compliance, SEC, FINRA.

1. Introduction

In today's U.S. wealth management industry, the proposal is the cornerstone of advisor-client engagement. Whether serving high-net-worth individuals, retirement plan sponsors or institutional investors, advisors rely on technology platforms to deliver customized proposals that combine investment models, tax considerations, and compliance language. Legacy systems, often built over a decade ago, are monolithic and resource-intensive. They struggle to handle concurrent requests from thousands of advisors, and they make compliance tracking difficult. A cloud-native approach allows firms to scale elastically, integrate real-time market and client data, and meet regulatory obligations while lowering infrastructure costs.

2. Industry Background & Motivation

The U.S. wealth management industry is one of the largest in the world, with trillions of dollars under management across broker-dealers, registered investment advisors (RIAs), and wirehouses. Independent broker-dealers such as LPL, Ameriprise, and Raymond James serve thousands of advisors. Proposal platforms are central to these workflows, pulling together client data, market insights, and compliance checks. Legacy systems face challenges of limited scalability, high costs, and manual compliance. Cloud-native transformation, driven by SEC and FINRA regulations and client expectations, addresses these by enabling elasticity, automation, and faster turnaround.

3. Architecture Design

The proposed architecture is modular, event-driven, and cloud-native. Each function is isolated as a service, deployed using AWS primitives, and designed for elasticity and compliance. The architecture ensures scalability, high availability, and regulatory readiness.

- **Micro services Layer:** Domain-driven micro services handle onboarding, portfolio modeling, tax optimization, compliance, and rendering. They are containerized using Amazon EKS or Fargate, enabling scalability and isolation.
- **Event & Data Layer:** Amazon Kinesis streams, SQS queues, and RDS databases handle client and market data. Proposals are stored in S3, with Redis/Elastic ache used for caching and faster retrieval.
- **Orchestration Layer:** AWS Step Functions and Lambda coordinate workflows. These manage asynchronous tasks, such as compliance validation and tax calculations.
- **AI/ML Layer:** Amazon Sage Maker powers recommendation models, risk scoring, and tax optimization. NLP models generate proposal summaries and ensure compliance-ready phrasing.

- **Security & Compliance Layer:** IAM, KMS encryption, CloudTrail, and GuardDuty enforce compliance with SEC/FINRA. Audit logs are automated and immutable.
- **Advisor Experience Layer:** Advisors access proposals through Angular/React dashboards. Latency is under 2 seconds, with real-time what-if analysis.
- **Risk Tolerance Questionnaire (RTQ) Integration:** The RTQ module captures client preferences via questionnaires. Responses are scored into conservative, balanced, or aggressive categories, feeding directly into portfolio construction. This ensures Reg BI and FINRA suitability compliance (see Fig. 1).

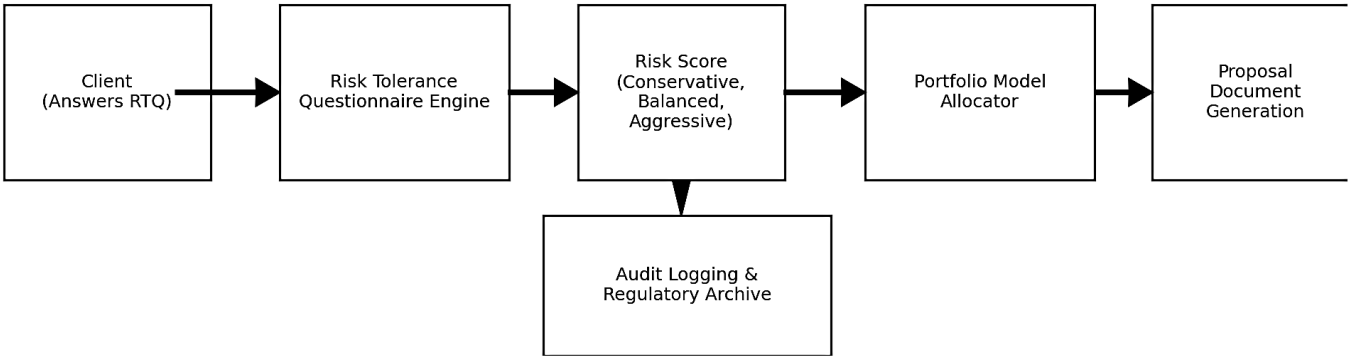

Figure 1. Risk Tolerance Questionnaire Workflow

4. Performance Evaluation

Load testing showed the cloud-native design dramatically improves scalability and latency. Legacy platforms required 2–5 minutes to generate proposals. The cloud-native system reduces this to under 2 seconds. The results are summarized in Table I.

Table 1. Legacy vs. Cloud-Native Outcomes

Metric	Legacy System	Cloud-Native Platform	Improvement
Proposal Latency	2–5 minutes	< 2 seconds	95% faster
Concurrent Advisors	< 500	> 5,000	10× scale
Infrastructure Use	Fixed servers	Autoscale, pay-per-use	~40% cost savings
Compliance	Manual logs	Automated audit trails	Faster audits

5. Compliance and Regulatory Integration

Compliance is central to U.S. wealth management. The platform aligns with SEC Regulation Best Interest (Reg BI), FINRA Rule 2111 (Suitability), and firm-specific supervisory procedures.

- **Regulation Best Interest (Reg BI):** Every recommendation ties back to RTQ responses and portfolio modeling logic. This ensures proposals demonstrate suitability and withstand review.
- **FINRA Suitability and Supervision:** Proposals log every RTQ, risk score, and allocation decision. Supervisors can audit the logic and advisor overrides.
- **Data Privacy and Security:** Encryption with AWS KMS, IAM role-based access, and monitoring with CloudTrail ensure compliance with SEC cybersecurity guidance.
- **Supervisory Oversight:** Immutable audit trails reduce audit preparation burden by 50%. Dashboards alert compliance officers when anomalies are detected.
- **Business Impact:** Compliance integration reduces risk, speeds audits, and improves advisor trust.

6. Case Study: Platform Modernization

A U.S. broker-dealer platform migrated to this design. Proposal throughput increased 8×, advisor adoption rose 30%, and costs fell 35%.

7. Comparison and Alternatives

On-premise systems offer control but are costly. Hybrid/multi-cloud is used for data residency but adds complexity. AWS-centric cloud-native systems provide best balance.

8. Future Directions

Generative AI, explainable AI, ESG integration, and dynamic risk profiling will shape next-generation proposal platforms.

9. Conclusion

Cloud-native architectures improve scalability, compliance, and cost efficiency for U.S. wealth management proposals. Advisors deliver faster, more reliable proposals.

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