AWS DRS Orchestration Platform

Serverless Disaster Recovery Orchestration

Enterprise-Grade Solution for Automated Recovery

November 2025

What is AWS DRS Orchestration?

Wave-based recovery execution (modeled after VMware SRM)

Server dependency management

One-click drill testing

Real-time progress monitoring

Complete audit trail

Built with: 100% AWS serverless technologies

Deployment: Modular Nested CloudFormation IaC

Cost: $3,360/year (fixed, regardless of server count)

The Problem We Solve

WITHOUT ORCHESTRATION:

- Manual server recovery (error-prone)
- No dependency management
- 12-16 hour recovery times
- Complex drill testing procedures
- No visibility into recovery progress

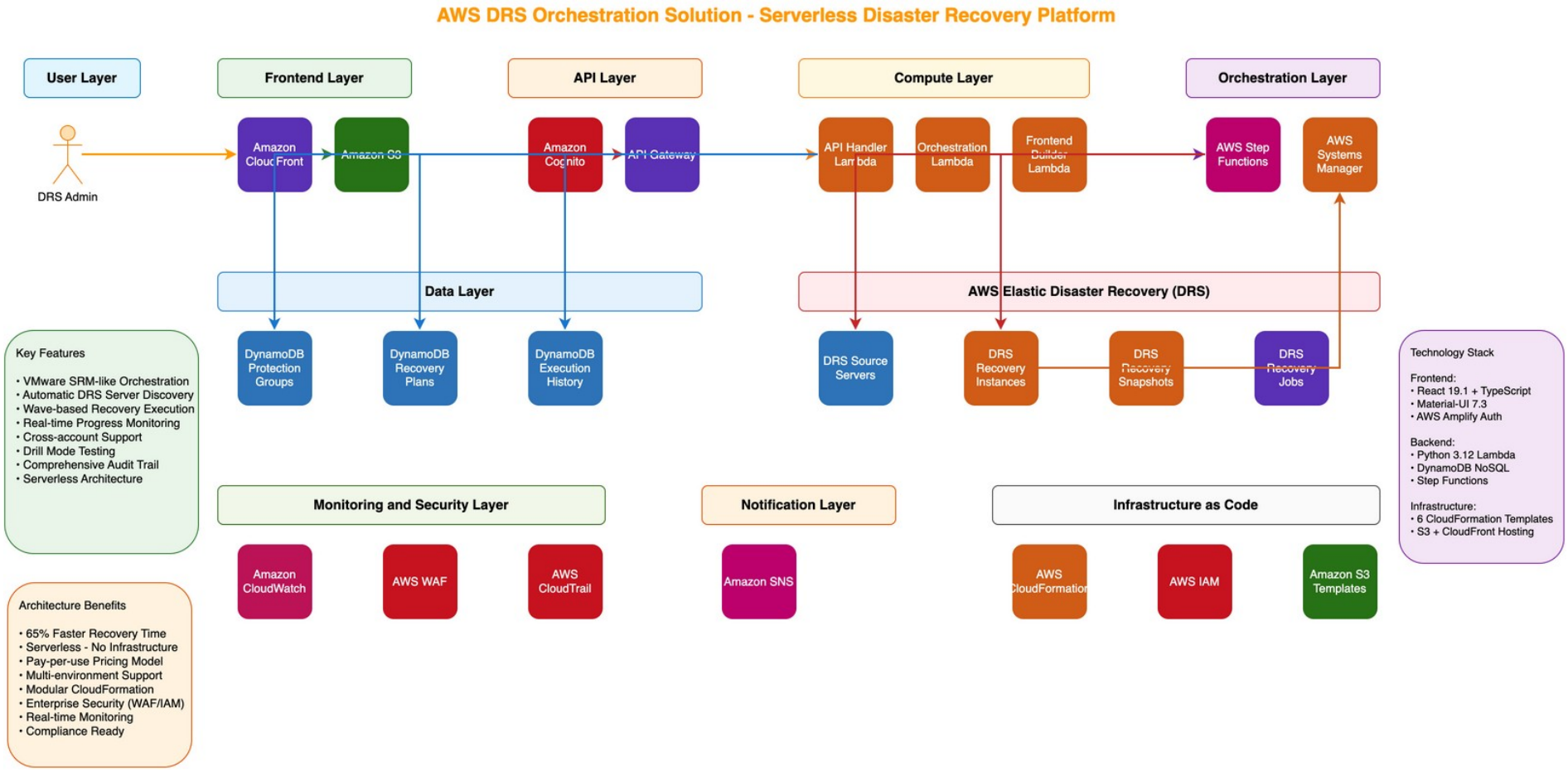
DRS ADOPTION CHALLENGE:

- Customers have VMware SRM orchestration
- AWS DRS lacks equivalent capabilities
- This gap blocks AWS DRS adoption

Architecture Components

Layer	Technology	Purpose
Frontend	React + TypeScript + MUI	Modern web UI
CDN	CloudFront + S3	Global distribution
Authentication	Cognito User Pools	Secure access
API	API Gateway (REST)	Managed API layer
Compute	Lambda (Python 3.12)	Business logic
Orchestration	Step Functions (35+ states)	Wave-based execution
Integration	DRS API + EC2 API	Recovery & health checks
Automation	SSM Documents	Post-recovery hooks
Storage	DynamoDB (3 tables)	Configuration data
Monitoring	CloudWatch + CloudTrail	Logs and audit

Solution Architecture



Core Capabilities

Protection Groups

- Group DRS Source Servers Logically
- Auto-discover DRS Source Servers with a Per Region Selector
- Reusable Across Plans

Recovery Plans

- Multi-Wave Dependency Recovery Sequences
- Wave 1: | Wave 2: (Depends on Wave 1)| Wave 3: (Depends on Wave 2)
- Sequential or Parallel recovery order in waves

Wave-Based Execution

Wave-Based Execution

- 15-second delays between servers
- 30-second delays between waves
- Automatic retry with exponential backoff

Drill Mode Testing

- Creates test instances (no actual cutover yet in MVP)
- Zero impact on replication

Real-Time Monitoring & One-Click Recovery

Real-Time Monitoring

- Execution history (start/end times)
- Job status tracking
- CloudWatch integration
- Audit trail in CloudTrail

One-Click Recovery

- Select Recovery Plan
- Click 'Execute Recovery'
- Monitor progress in real-time

AWS DRS Orchestration Platform Cost

Service	Monthly	Annual	Notes
Lambda	$100	$1,200	Recovery execution
DynamoDB	$50	$600	3 tables (on-demand)
API Gateway	$50	$600	REST API requests
CloudFront	$20	$240	Global CDN
S3	$10	$120	Frontend hosting
Cognito	$20	$240	User authentication
CloudWatch	$20	$240	Log retention
CloudTrail	$10	$120	Audit logging
TOTAL	$280	$3,360	Fixed cost

Total Solution Cost (1,000 Servers)

Component	Annual Cost	Notes
AWS DRS Service	$480,000	Scales with server count
+ Orchestration Platform	$3,360	Fixed serverless cost
= Total Solution	$483,360	Complete DR solution

Competitive Comparison

Solution	Orchestration Cost	Setup Time	Serverless	Wave Support
AWS DRS Orchestration	$3.4K/year	< 1 hour	✅ Yes	✅ Yes
VMware SRM	$1M+/year	Weeks	❌ No	✅ Yes
Zerto	$100K+/year	Days	❌ No	⚠️ Limited
Azure Site Recovery	$50K+/year	Days	❌ No	❌ No

TCO Summary (3-Year, 1,000 Servers)

Solution	3-Year Total	Annual Avg	Staffing
VMware SRM	$10.2M	$3.4M	4 FTEs
AWS DRS + Orch	$2.1M	$697K	1 FTE
Savings	$8.1M (79%)	$2.7M	3 FTEs

Business Value

For DR Managers and Staff:

- Familiar VMware SRM-like interface
- One-click recovery execution
- Real-time progress visibility

For DevOps Engineers:

- Modular CloudFormation Infrastructure as Code
- API-first Design
- CloudWatch Observability

For CIOs/Finance:

- 79% cost reduction vs VMware SRM
- Zero capital expenditure
- 75% staff reduction

Deployment Process

Phase 1: Setup (30 minutes)

- Deploy CloudFormation master template
- Configure Cognito users
- Review IAM permissions

Phase 2: Configuration (30 minutes)

- Discover DRS source servers
- Create protection groups
- Define recovery plans

Phase 3: Testing (30 minutes)

- Execute drill recovery
- Validate server launch
- Review execution history

Key Takeaways

1. Solution: Serverless Orchestration for AWS DRS

2. Cost: $3,360/year (99.7% cheaper than VMware SRM)

3. Performance: 65% faster recovery (16h → 6h for 1000 EC2 Instances)

4. Savings: $8.1M over 3 years (79% vs VMware SRM)

5. Deployment: < 1 hour via CloudFormation

6. Value: Enterprise-grade Capabilities at serverless scale

Thank You

AWS DRS Orchestration Platform

Making Enterprise Disaster Recovery Simple, Fast, and Cost-Effective