LocalStack

PayNetWorx Accelerates Cloud Development and Boosts Resiliency with LocalStack

Company Name
PayNetWorx

Company Description
PayNetWorx is a cloud-based payment platform with over 30 years of experience in the complete payment processing cycle—including acquiring, digital processing, authorization, settlement, and clearing.

Location
Van Alstyne, Texas

Industry
Technology, Information and Internet

Employees
40+

AWS Services

S3 Lambda KMS Data Firehose

Fargate ECS

PayNetWorx is utilizing LocalStack to minimize their dependency on shared development and testing environments, reducing their risk & spend while enabling increased resiliency testing.

Company Overview

PayNetWorx is a cloud-based payment platform with over 30 years of experience in the complete payment processing cycle—including acquiring, digital processing, authorization, settlement, and clearing. Headquartered in Texas, the company provides cutting-edge, secure and efficient payment processing services designed to enhance transaction speed and reliability.

Scalability, flexibility, and redundancy are key selling points of PayNetWorx's cloud-based architecture. Their application stack is built on AWS services, including AWS Key Management Service (KMS) for encryption and PCI compliance, Amazon S3 for object storage, AWS Lambda for serverless compute, Amazon Data Firehose for data streaming, Amazon Elastic Container Service (ECS) for containerized applications, and AWS Secrets Manager.

We spoke with John Calhoun, Chief Cloud Architect & Chief Security Officer at PayNetWorx, about the challenges his growing development team faced and how LocalStack is helping address them.

Challenges

PayNetWorx's development team historically relied on shared AWS-based development, testing, and QA environments, which presented several challenges:

- **Onboarding Hesitations:** New developers were hesitant to experiment in AWS environments for fear of disrupting team workflows or incurring unintended costs.

- **Collisions in Shared Environments:** Developers working in the same environment often faced conflicts when making simultaneous changes.

- **Slow Iteration Cycles:** Waiting for deployments in AWS slowed down development and testing cycles.

- **Limited Options for Resiliency Testing:** Testing failure scenarios in AWS was difficult due to potential impact on shared environments.

- **Budget Drained by Unused Services:** Shared AWS environments incurred expenses when unused services were left running.

These challenges were faced both in isolation and collectively. To begin addressing them, John came across LocalStack and started to experiment with testing his own workflow locally. Once he realized how simple it was and how quickly he could solve these challenges, he began exploring a broader rollout.

Solutions

PayNetWorx improved development speed and reduced reliance on shared AWS environments by integrating LocalStack for local development and testing. LocalStack's Chaos Engineering tools are already making an impact. Early experiments have uncovered architectural improvements, and teams are gearing up to leverage LocalStack's collaboration features for smoother developer onboarding and training.

Faster Development and Testing

Previously, all development and testing at PayNetWorx took place in cloud-based environments—requiring deployments across development, testing, QA, and production stages. This created bottlenecks:

- **Slow Iteration Times:** Deploying to AWS for testing took several minutes per iteration. With LocalStack, developers can now test changes instantly. As John puts it, *"You don't have to wait 5-10 minutes to get something deployed to see it—you can just do it right then."*

- **Reduced Environment Conflicts:** LocalStack allows developers to work independently in local environments rather than stepping on each other's changes in a shared AWS setup. "We ran into issues with developers interfering with each other's work. With LocalStack, everyone gets their own isolated local environment and database, so they can experiment freely," says John.

As LocalStack adoption expands across the team, John expects a significant improvement in developer efficiency.

Early Chaos Engineering Insights

PayNetWorx has begun using LocalStack's Chaos Engineering capabilities to enhance application resiliency. While still in the early stages, initial tests have already yielded valuable insights:

- **More Freedom to Test Failures:** LocalStack enables the team to simulate latency, service failures, and API call disruptions in a safe, local setting. "With LocalStack, I don't need extra instrumentation. I just repoint the endpoints and instantly simulate failures. I can aggressively cause problems and see how our system handles them," John explains.

- **Identifying Architectural Improvements:** In a recent experiment, Chaos Engineering helped uncover and remove an unnecessary dependency that could have introduced latency or failure risks.

While PayNetWorx initially considered AWS Fault Injection Simulator, they found LocalStack's Chaos Engineering tools easier to implement and more comprehensive.

Future Plans for Onboarding and Training

With a growing team of developers, PayNetWorx is designing an onboarding and training program using LocalStack. The goal is to provide a risk-free learning environment where new developers can experiment without concerns about breaking shared infrastructure or incurring unexpected cloud costs.

- **Using Cloud Pods for Faster Setup:** LocalStack's Cloud Pods allow teams to save and share the state of LocalStack environments, making it easier to onboard new developers.

- **Lowering Training Costs:** Running onboarding exercises in LocalStack eliminates the risk of new developers accidentally leaving AWS services running. "We can save money by using LocalStack instead of AWS for training. No more worrying about someone leaving ECS instances running over the weekend," John notes.

As LocalStack adoption expands at PayNetWorx, John anticipates further improvements in speed, cost savings, and resiliency.

"LocalStack allows us to move away from costly shared test environments to local environments where developers can experiment freely and test aggressively without stepping on each other."

John Calhoun
Chief Cloud Architect and Chief Security
at PayNetWorx Officer

Looking Ahead

Although still in the early stages of full adoption, PayNetWorx is already seeing benefits from integrating LocalStack into its development workflow. With faster testing cycles, improved application resiliency, and plans for enhanced onboarding, LocalStack is helping PayNetWorx streamline cloud development while reducing costs. As John and his team continue rolling out LocalStack, they expect even greater gains in efficiency and reliability across their cloud infrastructure.

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- Do a live walkthrough of the app
- See customized extension
- Explore which pricing plan is best for you examples

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