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Cloud-Native Maturity Matrix

A guide to advance your cloud-native application development capabilities through improved team skills, processes, and technology

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Where is your organization in its cloud-native Journey?

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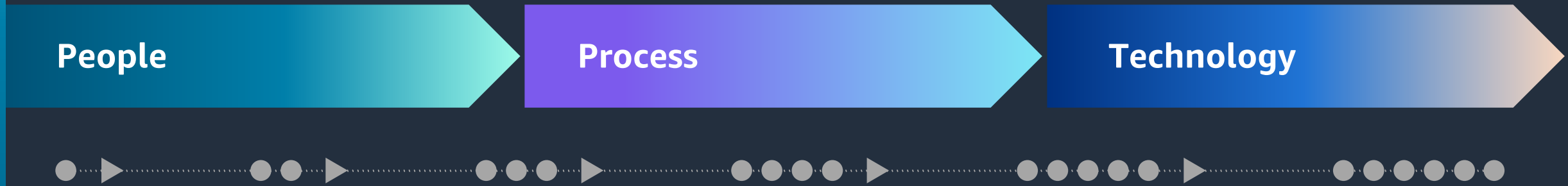
Modernization is a critical business priority— understand the steps you need to take to get there

New cloud-native tools and practices help development teams build reliable, scalable, and secure applications. Yet putting these tools and processes in place requires careful planning. Learn how each element of your organization plays an important part in effectively taking advantage of them.



Use the following matrixes to identify where you are in your journey to cloud-native maturity and determine the **steps you need to take to achieve your goals.**

Once you've reviewed this guide, learn more about the tools and processes discussed here by watching the **Evolving to Cloud-Native webinar series ›**

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People—Empower individual contributors and teams across your org to go cloud native

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As you move past slow, unwieldy dev processes step by step, your employees' ability to iterate and innovate quickens

Capability	L1: Initial	L2: Piloting	L3: Adoption	L4: Maturity	L5: Evolution	Advance your knowledge
Leadership **Does leadership understand the need to adopt cloud-native DevOps tools and practices?**	Leadership agrees to support discovery and training	Department-level leaders initiate trial use of new tools and processes	Initiatives are implemented and metrics are shared with other teams	Standardized DevOps process from beginning to end of the dev process	Cross-organization leaders collaborate to more efficiently achieve common goals	**Executive support resources ›**
Upskilling **Are employees equipped with the knowledge, skills, and tools required to take advantage of new cloud-native technologies?**	Attract employees who want to learn about cloud-native strategies	Develop cloud-native experts who are hungry to hone their skills	Cloud-native champions on teams train employees	Needs assessment and training—mentoring and workshops	Continuous improvement of capabilities	**Watch Cloud-native Continuous Deployment and Experimentation webinar ›**
Communication and collaboration **How can employees and leadership uplevel the efficiency with which they communicate and collaborate?**	Set up tools to facilitate communication (Slack, Jira, Asana)	Intra-team communication and collaboration	Active cross-team integration	Collaboration across org with metrics to identify areas of improvement	Well-established communication mechanisms across the org	**Participate in the Practicing DevOps workshop ›**
Everything as code **How do your teams build on the success of other teams and initiatives and avoid unnecessary redundancies?**	Define infrastructure using Terraform, CloudFormation, CDK, or Pulumi	Infrastructure as code deployed through a pipeline and fully tested	Configuration through code and deployed via pipeline	Everything defined as code and checked into a repository deployed through a pipeline or GitOps	Inner source code shared throughout org and anyone can update and improve through pull requests	**Watch GitOps and Everything-as-Code for Cloud-Native Applications webinar ›** **Watch Creating API-led Domain-specific Platforms for Everything-as-a-Service webinar ›**

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Process—Optimize how your teams approach every aspect of development

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As your organization matures and adds capabilities, each step moves it closer to achieving a cloud-native DevOps practice

Capability	L1: Initial	L2: Piloting	L3: Adoption	L4: Maturity	L5: Evolution	Advance your knowledge
Experimentation **Where is your organization in its ability to try new strategies and technologies?**	Test features—non-production	Ability to turn experiments on or off	Dynamic feature flags without system restart	Data & metrics prove worth	Run controlled experiments in production	**Watch Orchestrating Continuous Delivery for Cloud-Native Applications webinar ›**
Continuous deployment **How close are you to being able to automate the process of pushing code into production?**	Deploy to lower-level environments	Schedule delivery process	Continuous integration and delivery	Gated deployment to production	Deployments from dev to production are fully automated	**Watch Cloud-native Continuous Deployment and Experimentation webinar ›**
Change management **How easily can you adapt processes and strategies to evolving needs?**	Change management system in place	Integrated bug tracking	System integrated with CI/CD pipelines	Automated creation of change control record	Automated change management process	**Read Automating Safe, Hands-off Deployments ›**
Continuous feedback **How can you evaluate the effect of each release on user experience to improve future releases?**	Telemetry from application	Telemetry from systems	End-to-end tracing	Signals and metrics across entire dev lifecycle	SaaS-based observability & AIOps	**Watch Cloud-Native Observability: Actionable Intelligence for Complex Systems webinar ›**

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Lean delivery teams **How do you simplify by doing more with less resources?**	Start self-contained & empowered team	Everything as a Service supports lean teams	Multiple lean teams within a business group	Lean teams across multiple lines of business	Lean teams across the org	**Watch AWS re:Invent: Two-pizza Teams: Organizing for Innovation webinar ›**
Chaos engineering **Can you manage risk and maintain reliability under any circumstance?**	Monitoring & alerting of systems and apps	Backup & disaster recovery runbooks	Scheduled disaster recovery testing	Resilient architecture	Chaos experiments in production with no downtime	**Watch Chaos And Feature Experimentation for Safer, Faster Deployments with AWS webinar ›**
Agile dashboards **How does your team stay organized?**	Whiteboard with post-it notes	Implement Project planning tool	Toolchain integration	Templated process	Full visibility into every stage of path to production	**Watch Cloud-Native Observability: Actionable Intelligence for Complex Systems webinar ›**
Executive sponsorship **Does leadership understand and support your cloud-native ambitions?**	Identify executive who understands benefits of cloud native	Executive sponsors a team to pilot	Funding is formalized	C-level executive sets clear direction	Org executives aligned around common cloud-native vision	**Learn more about executive sponsorship ›**

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Technology—Improve the tooling and overall tech stack teams use

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Adoption of the right tools gives your teams new cloud-native capabilities that help bring offerings to market faster and with better reliability

Capability	L1: Initial	L2: Piloting	L3: Adoption	L4: Maturity	L5: Evolution	Advance your knowledge
Continuous integration **Adopt a dev practice where developers merge code changes into a central repository, after which automated builds and tests are run**	Local environment build and integration	Central repository and developers are integrating with low frequency	Code and artifact repository with developers integrating frequently and automated build and test	Fully automated integration build and test	Fully automated integration throughout the org for all environments	**Read Continuous Integration for Automation and Scale whitepaper ›** **Watch the CI/CD pipelines module ›**
Deployment automation **Automate processes that facilitate feedback loops between ops and dev teams so iterative updates can be deployed faster to apps in production**	Templates available for deployments	Automated lower-level environment deployments	Self-service deployment for developers to sandbox environments	Automated deployments	Automated deployment testing and rollbacks	**Watch Cloud-native Continuous Deployment and Experimentation webinar ›**
Continuous testing **continually evaluate the quality of the software as part of a continuous delivery process by testing early and often**	Manual testing using documented procedures	Unit and functional test automation	Triggered automated tests	Testing extended to production with alerting and partial automated remediation	A/B testing & chaos engineering	**Read Continuous Quality and Testing to Accelerate Application Development whitepaper ›** **Participate in the continuous testing workshop ›**

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Continuous delivery **Adopt a practice where code changes are automatically built, tested, and prepared for a release to production**	Define manual process for building software	Regular automated build and testing. Any builds can be recreated from source	Automated build and test cycle every time a change is committed	Build metrics gathered, made visible and taken into account	Continuous work on process improvement, better visibility, faster feedback	**Watch Fast, Secure Continuous Delivery for Cloud-Native Applications webinar ›**
Cloud-native architecture **Implement immutable infrastructure, microservices, declarative APIs, and containers**	Decoupled monolith	Distributed design	Strangler pattern	Leverages service abstractions such as, SQS, SES, SNS, EventBridge	Event-driven architecture; microservices	**Watch Evolving to Cloud-Native Webinar Series ›**
DevSecOps **Integrate security initiatives at every stage of development**	Code is scanned at the repo level	Code checks are done in the developers environment within the IDE	Code is checked at all stages of the CI/CD pipeline	Policy checks are integrated with repos and CI/CD	Integrate security with every phase of app delivery–from developer workstation to production	**Watch A Guide to DevSecOps for Cloud-native Applications webinar ›**
Observability **Use tools that help collect and analyze performance data to glean real-time insights**	Application and infrastructure monitoring	Shared dashboard and alerting capabilities	End-to-end visibility for additional use cases such as end-user experience monitoring	Analytics & intelligence provide data to business stakeholders	AIOps, surface anomalies, reduced signal to noise, automated remediation	**Watch Cloud-Native Observability: Actionable Intelligence for Complex Systems webinar ›**

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About AWS Marketplace

AWS Marketplace is a digital software catalog that makes it easy to find, try, buy, deploy, and manage software that runs on AWS. AWS Marketplace has a broad and deep selection of ISV solutions that can help you drive modern application development in the cloud.

These products can be integrated with AWS Services and other existing technologies, enabling you to design, build, deploy, and optimize applications using AWS DevOps best practices.

Visit AWS Marketplace to learn more ›

Continue your journey by learning about the tools and processes discussed in this guide via the **Evolving to Cloud-Native webinar series ›**

This series will help you evolve how you build and deploy applications to accelerate innovation and take full advantage of the benefits of cloud-native technologies such as containers, microservices, immutable infrastructure, and APIs.