

Difference between SaaS, PaaS and IaaS

Aspect	IaaS (Infrastructure as a Service)	PaaS (Platform as a Service)	SaaS (Software as a Service)
 Definition	Consumer provisions basic computing resources, CPU, storage, networks, and may deploy any OS or application. Provider controls the underlying cloud infra.	Consumer deploys apps (built with provider-supported languages/tools) onto a managed runtime. Provider controls infra + OS; consumer controls code & data.	Consumer uses provider-hosted applications via browser/API. Provider controls everything except limited user-level settings & data.
 Primary Users	IT architects & administrators	Developers & DevOps teams	Business end-users & line-of-business managers
 Provider Manages	Physical data center, hypervisor, networking	Everything in IaaS plus OS, middleware & runtime	Everything in PaaS plus the application itself
 Customer Manages	OS, middleware, runtime, apps, data, access control	Apps, data, access control	Data, user access / configuration
 Typical Use Cases	Lift-and-shift of legacy VMs, disaster-recovery sites, burst/high-compute workloads (HPC, big-data)	Rapid web/mobile app builds, microservices back-ends, API development, IoT data ingestion	Email & collaboration suites, CRM/ERP, file-sharing, HR & finance systems
 Common Examples	AWS EC2, Azure VMs, Google Compute Engine, DigitalOcean	Heroku, Google App Engine, Azure App Service, Red Hat OpenShift	Microsoft 365, Google Workspace, Salesforce, Dropbox
 Pros	• Greatest flexibility • Granular cost scaling • No hardware CAPEX"	• Faster dev cycles • Automatic scaling & patching • Built-in CI/CD hooks"	Consumer uses provider-hosted applications via browser/API. Provider controls everything except limited user-level settings & data.
 Cons / Limits	• Requires in-house ops skill • Bill shock if un-governed"	• Less control over OS & runtime • Potential vendor lock-in"	• Limited customization • Data-residency & multi-tenant risks"
 Security Responsibility Snapshot	• Provider secures facility & hypervisor • You secure OS, network configs, data & IAM"	• Provider patches OS/runtime • You secure code, dependencies, data & IAM"	• Provider secures full stack • You secure data, identity & usage policies"