IaaS Vs Paas Vs Saas

| **Category** | **IaaS (Infrastructure as a Service)** | **PaaS (Platform as a Service)** |  |
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| **Definition** | Provides virtualized computing resources over the internet (servers, storage, networking). | Provides a development platform and environment to build, test, and deploy applications. | Delivers ready-to-use software applications over the internet. |
| **Target Users** | System administrators, DevOps teams | Developers, programmers | End users, business users |
| **User Responsibilities** | - Install & manage OS- Configure network- Deploy applications- Manage data- Ensure runtime | - Develop & manage applications- Manage app data & settings | - Use the software- Manage user-specific data |
| **Provider Responsibilities** | - Physical hardware- Virtualization- Storage- Networking | - Hardware + OS + Middleware + Runtime- Auto-scaling, load balancing | - Full application stack- Maintenance, updates, and infrastructure |
| **Scalability** | High – user controls scaling of VMs, storage, etc. | High – automatic scaling often provided | Very high – handled entirely by provider |
| **Customization** | Full – you control the entire environment | Medium – app-level customization | Low – limited to configuration settings |
| **Speed of Deployment** | Slower – requires setup of OS and environment | Faster – ready-to-use development environment | Fastest – ready to use immediately |
| **Cost Structure** | Pay-as-you-go for usage (compute, storage, network) | Pay for usage or number of apps/users | Subscription-based (monthly/annually) |
| **Examples** | - Amazon EC2- Microsoft Azure VM- Google Compute Engine- DigitalOcean | - Google App Engine- Heroku- Azure App Service- AWS Elastic Beanstalk | - Gmail- Google Docs- Microsoft 365- Dropbox- Salesforce |
| **Use Cases** | - Hosting websites- Creating VMs- Storage and backup- High-performance computing | - App development- API integration- Rapid deployment- Microservices | - Email & communication- CRM- File sharing- Collaboration tools |
| **Pros** | - Full control- Highly scalable- Flexible & customizable | - Simplified development- Reduces time to market- No infrastructure management | - No setup required- Accessible anywhere- Automatic updates |
| **Cons** | - Requires technical expertise- Complex to manage- Maintenance overhead | - Limited control over OS/runtime- Possible vendor lock-in | - Less control/customization- Data privacy concerns- Feature limitations |

