

IaaS vs PaaS vs SaaS for Beginners

What Are IaaS, PaaS, and SaaS?

Term	Meaning	Real-life Analogy	Examples
IaaS	Infrastructure as a Service	Renting land to build your own house	AWS EC2, Microsoft Azure VM, Google Compute Engine
PaaS	Platform as a Service	Renting a pre-built house you can decorate	Heroku, Google AppEngine, Azure App Services
SaaS	Software as a Service	Staying in a hotel where everything is done for you	Gmail, Google Docs, ,Dropbox, Zoom

Simple Comparison for Newbies

Feature	IaaS	PaaS	SaaS
Control	Full control	App-level control	Just use software
Ease of Use	Hardest	Moderate	Easiest
User Responsibility	Security, updates	Code & data	None
Flexibility	High	Medium	Low
For Whom?	Sysadmins	Developers	Users

How to Set Up & Secure: Beginner Focus on IaaS

Use AWS or Oracle Cloud Free Tier:

- Register with email & card
- Launch a free Ubuntu VM
- SSH into VM using key pair
- Install Nextcloud: `sudo snap install nextcloud`

Secure Your IaaS Cloud VM

Task	Command / Description
Update system	<code>sudo apt update && sudo apt upgrade</code>
Create non-root user	<code>sudo adduser myuser</code>
Disable root login	Edit <code>sshd_config</code>
Enable UFW firewall	<code>sudo ufw allow ssh && sudo ufw enable</code>
Install Fail2Ban	<code>sudo apt install fail2ban</code>
Set up backups	Use <code>rsync</code> , <code>Duplicati</code> , or <code>Restic</code>

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Use HTTPS	<code>snap run nextcloud.enable-https</code>
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PaaS/SaaS Simpler Options

- PaaS: Render, Heroku (just push code)
- SaaS: Proton Drive, Notion, Google Docs

Summary Advice for Beginners

If You Want To...	Use This
Learn servers & Linux	IaaS (EC2, Oracle VM)
Focus on coding	PaaS (Render, Heroku)
Just use tools	SaaS (Dropbox, Google Drive)