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# The ultimate guide to cloud infrastructure for startups

We put together our expertise and global trends to give you insights and advice for your next project.



APEX LABS

# Introduction

Selecting the right partners and resources for a startup is essential. Nowadays, each startup needs some external software, services, or APIs to run the business. As a startup owner, you will most likely need a mobile or web app (ideally cross-platform) and supporting cloud services.

But even before starting to build your application, every new startup owner is faced with a few critical questions and doubts:

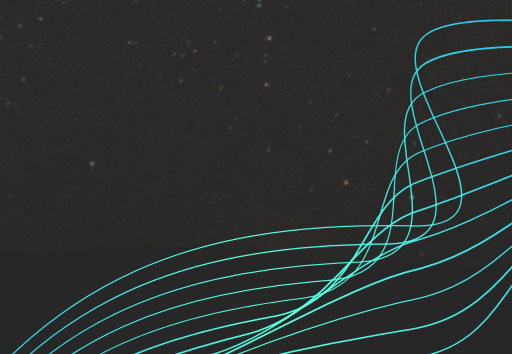
- Which services do I need for a successful project?
- Which service providers should I use for my project?
- What are the top solutions available on the market?

Suppose you make a wrong decision or don't spend enough time researching, it could significantly affect your startup's future efficiency and scalability. Needless to say, making the transition to the appropriate system is extremely expensive. Better spend the funds on the user acquisition, right?

This guide will help you navigate the space of cloud services currently in the market and give you some tips on making the best choices in favour of your business. We put together our expertise and global trends to provide insights and offer you strategic advice for your next project.

Ready to learn the most important cloud technologies that every startup should use?

**Let's get started!**



# What cloud services do you need and why?

Back in the day, each company would have a room in their building with many servers - for their website, email, monitoring, and database. Then, companies transitioned to storing these servers in dedicated data centers. Here, a company would rent some rack space close to the internet backbone.

Today, the most common and cost-effective way is to store the IT infrastructure in the cloud, from software-as-a-service to the most common services.

**Cloud services** are the infrastructure or software that are hosted by third-party providers.

**IT infrastructure** refers to the components required to set up and manage a startup in an IT environment. An IT infrastructure, if correctly implemented, helps companies achieve their goals and effectively distribute their costs.

There are many ways to manage and integrate components of IT infrastructure. In this guide, we have divided them into two categories- core business and supporting components.

## Core business components

- DNS (domain name service)
- Email
- Managed database servers and clusters of virtual machines

## Supporting components

- Monitoring
- CRM (customer relationship management)
- Customer communication and support
- Payment processors

# 01 Domain

No business can exist without an internet presence in today's world, so the first step is finding a catchy domain name.

01

## Decide on the domain name

If you are just starting your business, the best approach is to brainstorm and identify a name that perfectly aligns with your business idea.

02

## Check if the name is free

You can use different domain registrars like **GoDaddy** or **Namecheap**. However, do not risk making a common mistake that most fresh founders make - which is overpaying for your domain.

### TIP

The best way to find out if your domain name is free and to find the best deal for your domain name is to use [this service](#).

03

## Find a DNS service provider to manage its content

The Domain Name System (DNS) is a phonebook of the Internet. Simply put, when somebody wants to visit your website - either by typing its name or following a link, the browser contacts the DNS server to locate the IP address of your web server.

There are a few prominent players in the market: **Google**, **AWS**, and **Cloudflare**.

04

## Create Cloudflare account

Cloudflare is a great starting place - and it is free. It is independent of your hosting provider, and offers free caching and protection services.



The total turnaround time for setting up your domain, and finalizing it with your approval will typically take approximately **1 hour**.

## 02 Email

### Company emails

You will need a company email account for yourself and your future employees. You can start by using just basic services such as Gmail (you will get an email with the following format: name@gmail.com). However, many other cloud services require you to use an email address connected to your company domain.

Furthermore, if you want to use a company email for Google Calendar to support your business meetings in a medium like Google Meet, you will need to set up groupware.

Groupware refers to programs that enable people to work together remotely.

A good trouble-free choice would be [Google Workspaces](#), which comes with Google Calendar, Drive, Cloud Storage, Spreadsheets, Google Meet etc.

Google Workspace's pricing is very flexible and starts from [6 USD/user/month](#).

To begin, you just need to create an account with [Google Workspaces](#), which can be set up in a couple of minutes.

# 02 Email

## Email sending providers for operational emails

You will also need an outgoing mail service for your operational, transactional, and marketing emails. This requires specific technical knowledge, and it is usually an initial part of building your platform. Your tech partner should set it up for you, but it is generally up to you to select your service provider. Here are some accessible choices that could be interchangeable.

The best by far and the least common is Amazon SES. It is very cost-effective and reliable as it is an Amazon Web Services (AWS) product. Amazon SES is an email service that enables developers to send mail from any application, and it supports transactional, marketing, and mass email communication.

AWS offers a **free usage tier** - \$0 for the first 62,000 emails you send per month and \$0.10 for every additional 1,000 emails you send.

### TIP

As a self-funded startup founder, you can apply for \$1,000 in AWS credits and \$350 in Developer support credits. If you want to apply now, just visit this link. We advise all our clients to use this approach, as it is a cost-effective option. As startup owners, it is always wise to save wherever you can!

## Other suitable alternatives are:

01

### Postmark

Lightning-fast email delivery service provider. Postmark, is used by companies like Asana or MOZ. Pricing is also based on the number of emails you send and starts at \$10 per month for 10,000 emails. All new accounts start on the free plan offering 100 emails per month.

02

### Mailgun

Email service for developers, offers libraries for popular languages like Python, Ruby, Java, C#, PHP, and more. Mailgun offers 5,000 free emails per month for three months; then, you will pay for what you send as a part of the Pay As You Grow plan.

03

### Sendgrid

Email service providers cater to developers and marketers as well. Companies such as Meetup and eBay use Sendgrid.



The total turnaround time for setting up Amazon SES service, including slack integration, is **30 mins.**

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"THANKS TO APEX LABS' DEVELOPMENT PROWESS, THE CLIENT SUCCESSFULLY LAUNCHED THEIR APP WITHOUT TECHNICAL ISSUES. THEIR SPEEDY WORK AND HIGH-QUALITY OUTPUT IMPRESSED THE COMPANY. OVERALL, THEY WERE ABLE TO DELIVER WHAT WAS EXPECTED OF THEM, LEADING TO A FRUITFUL ENGAGEMENT."

**Martyn Sisson, CEO Turnaround app**

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# 03 Online virtual office

As you build your startup, you will be collaborating with your team and several external collaborators, consultants, designers, and possibly a software development agency or two.

An online virtual office will be the medium where you communicate with your team, share links, screenshots, perhaps even files (but Google drive or some file server is more suitable for some of these tasks).

Although it is not well known, a very cool feature of the virtual office is that it can be used to receive notifications from all kinds of sources, including the chat widget on your site, leads for new customers, errors and alerts from your servers, and source code updates.

So, what options do you have? We listed the most popular ones below:

01

[Slack](#)

02

[Mattermost](#)

03

[Rocket Chat](#)

04

[Zulip](#) - open source

Setting up a virtual office and the necessary integrations is a very intuitive and fast process. Often you don't need technical knowledge to establish a virtual office.

**Slack** is our winner! Simply because of the vast number of out-of-the-box integrations it has.

You can use the free version of Slack; just make sure you don't use it to store any useful information that you will need to look up, as it only holds the last 10,000 units of your data.

## 04 A safe place for your code

Whatever you build, you'd want your team and your software provider to collaborate and be consistently present to keep track of the changes.

There is no need to reinvent the wheel here; the golden standard of the version control system is GIT, as you need an online software-as-a-service that would allow you to:

- Host repositories, which are centralized places to store and maintain data.
- Create and merge requests from different branches.
- Have some sort of continuous integration (CI) implemented. According to Atlassian, **Continuous integration** is the practice of automating the integration of code changes from multiple contributors into a single software project.
- Raise and keep track of issues.

As a startup owner, you'd want to own the repository and create an account yourself. Your software provider will take care of the rest. The options are:



We suggest using BitBucket, but only if you use other Atlassian services. Otherwise, GitHub and GitLab are equally popular options. However, GitHub may be slightly more convenient if you plan to incorporate open source libraries into your project, which you most likely will.

Once you create it, you would want to link it to your Slack channel “#updates” so you can see all the activities in Github (developers pushing code, team members opening or closing issues) in real-time on Slack.

Usually, changing the online code repository is very easy until you have an elaborate CI in place, but even then, it would only take a couple of days.

However, it is best to start with the standard ‘GoTo’ option - GitHub and you can change it later, if need be, for any reasons specific to your project.

# 05 Hosting for your backend & servers

Your app will be required to connect with your cloud backend through the code that you write. There are myriads of backend frameworks, some of which come as software-as-a-service with hosting included, while some you may need to deploy.

You have two options regarding your backend: a type of no/low-code backend, which you will just configure via the web interface (like Firebase or AWS Amplify), or a custom-made backend in either Python/Java/JavaScript/Ruby/Go languages.

Let's assume you have a software provider who builds a custom backend for you, and you need a place for it in the cloud to host it. The options are numerous; you can always start by requesting free credits from [Google](#) or [Amazon](#) (or both) to get you going for a few months - up to a year, then you can fine-tune your hosting provider as per your hosting requirements.

Your tech partner should build a backend that is not tied to any particular hosting provider so that you can easily switch later.

The challenges that you'll be encounter should you choose the wrong provider are:

- **Overpaying**
- **Low performance (slow, hanging software)**
- **Low reliability (server down sometimes)**

One thing is certain - you will need at least two different "environments", one for development and testing (sandbox) and another one for your production ("live"). There are several options for hosting providers, but the most popular ones are:

01

[Google Cloud Platform / Firebase](#)

02

[Amazon Web Services](#)

03

[Microsoft Azure](#)

04

[Digital Ocean](#)

However, note that your website needs to be up and live if you want to apply for credits.

# 05 Hosting for your backend & servers

Usually, the process of requesting credits is as follows:

1. Get your website online
2. Have your pitch deck ready to send; A well-structured deck will be sufficient
3. Apply online
4. Answer any additional questions via email or call

## TIP

Do not set up the hosting infrastructure manually (by hand). Your technology partner should use some sort of high-level automation like terraform.io to maintain your cloud infrastructure configuration based on the configuration files you create and maintain. This means you will not need to log in to different website portals to change things like DNS, virtual machines, databases. Alternatively, you would change the configuration file, and terraform takes care of the rest for you.

Not only is this generally faster, but it saves an enormous amount of time in the future and nearly eliminates the need for the DevOps team to pitch in. Many software development agencies will be unhappy with this because it usually generates significant revenue for them and if you take this approach, their DevOps are out of job \*Whoops.\*



Apex Lab's unbeatable  
turnaround time for setting up  
the component: Hosting for  
your backend / servers with  
Terraform is **4 hours**

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"APEX LABS IS A SKILLED AND STRATEGIC DEVELOPMENT COMPANY. EVERYTHING WITH OUR NEW APP HAS BEEN WORKING EXCELLENTLY. THEIR TRANSPARENT COMMUNICATION SPURRED CONTINUED ENGAGEMENT. THEY ARE RESPONSIVE AND DELIVER EXCEPTIONAL SERVICE."

**Alex Y. CEO AAHI**

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## 06 Analytics

Knowledge is power, so you need to know how many users you have and how they interact with you and your services.

Your software partner will incorporate several 'hooks' in your product that send telemetry events to your servers.

**Telemetry events** are messages that your cross-platform app sends to the analytics server when certain events occur. For example, when a user logs in, navigates to different pages inside your app, makes a purchase, or deletes your app.

You will know exactly how many active users you have at any point in time and get an indication of the popularity of your features. If you plan to run digital ads, you should think about which channels will be the most effective, then add pixels to the website and SDK to the app.

**SDK** refers to a Software Development Kit, which is a set of software development tools that enable the creation of applications for a particular software package, software framework, hardware platform, computer system, operating system, or a similar development platform.

The most popular analytic platforms are:

01

Google Analytics

02

Firebase

03

Facebook

04

LinkedIn

Google Analytics combined with Firebase analytics (also a Google product) is a great free starting place. Once you have over a million users, you can revisit this choice and consider a custom-tailored solution.



Analytics including cross-  
platform app integration takes  
**30 min to 1 hour**

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*UNBELIEVABLE VELOCITY OF OUTPUT - WE COULDN'T HAVE PICKED A BETTER TEAM TO WORK WITH TO CARRY THE TORCH UP TO THIS POINT. I CAN'T BELIEVE HOW QUICKLY IT GOT TO THE POINT WHERE THE CONCEPT CAN TANGIBLY INTERACT. TRULY AMAZING.*

**Jason Elman, CEO Social app NDA**

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# 07 Alerts & Monitoring

Somewhat similar to the previous step, you should constantly be on the lookout when your users encounter a bug or when one of your backend servers does not work as expected.

Both Google Cloud and AWS offer alerting and monitoring systems that can be connected to your Slack account, so you will be notified with a message in the Slack channel #alerts as soon as there is a problem.

The system works similar to telemetry for your frontend - your application will send "error" events back to the server. You do need a separate cloud service for that; some providers are:

01

[Sentry](#)

02

[GlitchTip](#)

03

[Instabug](#)

04

[Crashlytics](#)

Sentry is great, but it used to be open-source, and now the licensing and plans are not that attractive. Fortunately, GlitchTip is a free open source alternative that uses the same SDK as sentry.io.

Crashlytics can be used in conjunction with Sentry/GlitchTip for catching low-level platform errors, especially on Android. For example, some errors in system libraries.

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*"Despite tight deadlines, Apex Labs still managed to overcome difficult tasks. They were highly available for the client's requests and provided accessible communication. The team was productive throughout with fewer resources. In the end, they met the company's needs within a short period of time."*

**Matthew, Founder of NFT company**

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## 08 Setting up your CRM - Optional, but highly recommended

CRM system, or a customer relationship management system, is a tool where you can see the incoming leads, send emails, and manage invoices. Some CRM systems also allow you to create and analyze sales funnels.

The biggest mistake companies make at this step is thinking that excel tables will be enough to begin or worse - go for the cheapest CRM. As your business grows, data migration to another CRM will be the biggest pain. Most CRM requires some learning, and it is worth investing your time into that, as that helps you reap its full benefits.

We highly recommend you get hands-on experience with CRM from the very beginning of your business. It will save you a lot of time and money, and you will be able to have all your customers' data in one place, manage your invoicing, payments, and even kickstart your marketing!

If you decide to use a CRM, you should first understand your business requirements and what a CRM system can help you achieve?

There are several different CRM systems in the market, some of which are:

- |             |                      |             |
|-------------|----------------------|-------------|
| 01          | 02                   | 03          |
| <u>Zoho</u> | <u>FreeAgent CRM</u> | <u>Odoo</u> |

At Apex Labs, we prefer Odoo because it is open-source and offers CRM and the whole suite you need to manage your business. Setting up the CRM system could be a very tech-savvy task, but your tech partner can assist you with that.



Apex Lab's unbeatable  
turnaround time for CRM  
including Slack integration,  
email and website contact  
form integrations is  
approximately  
**4 hours**

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"THANKS TO APEX LABS' EFFORTS, THE APP HAS EXCELLENT RATINGS. THEY'VE ALSO ENABLED THE COMPANY TO SUCCESSFULLY GENERATE REVENUE THROUGH THEIR NEWLY ESTABLISHED PAID SUBSCRIPTION FEATURE. RESPONSIVE AND TRUSTWORTHY, THEIR TECHNICAL CAPABILITIES ARE NOTEWORTHY, LEADING TO AN ONGOING COLLABORATION."

**Jesse Wilson, CEO Action App**

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# 09 Customer Communication & Support

You, most certainly, will need to have a streamlined feedback loop with your customers.

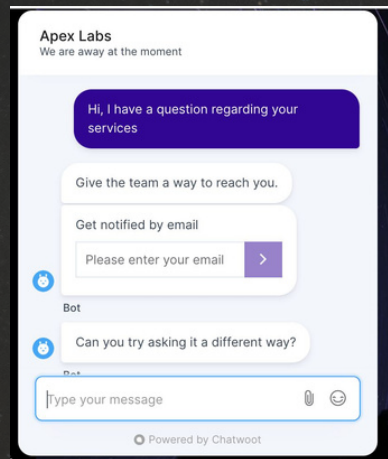
The simplest solution is to set up a `support@yourdomain.com` email account. But, of course, keeping track of all the requests will quickly get out of hand.

There are a few giants like ZenDesk and Jira; however, they are more suitable for larger companies and corporations.

As you start, it is suggested to have a minimum of an email inbox to track the request conversations and a website chat widget. Some of the “virtual office” services (like Rocket Chat) offer some partial functionality.

Alternatively, an excellent open-source tool - Chat Woot , is free and can be integrated into Slack. It comes with an email inbox and a website widget (that you can also use for in-app chat).

So when a user sends an email or starts a conversation on the website, you will get a message in your Slack and you will be able to respond immediately inside the app.



ChatWoot

Other options are:

01

Tiledesk

it is free and open source tool, but we see a lack of integrations

02

Livechat

offers chat only and not free.

03

Intercom

is very expensive for startups, starts at \$79/month



\*Apex Lab's unbeatable TAT for setting up the component: Customer communication including Slack integration is around **1 hour**.

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"APEX LABS CONSISTS OF TALENTED DEVELOPERS WITH A SURPLUS OF EXPERIENCE IN DELIVERING INNOVATIVE SOFTWARE. THEY EFFECTIVELY MANAGE THE PROJECT AND KEEP EVERYTHING PROGRESSING AS SCHEDULED. THEY'RE COMMUNICATIVE PARTNERS THAT WORK TO PRODUCE THE BEST PRODUCT POSSIBLE."

**Mike S., IoT VodaVsegda**

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# 10 Monetization of your project

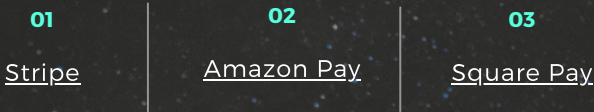
Unless you're working for a non-profit, you would definitely want to see an influx of payments from customers one way or another, sooner rather than later. There are several popular business models you can adopt:

- Fee per transaction - could be applied for food delivery business for example
- In-app purchase - which is ideal for games
- Web adverts - for instance, freemium products
- Subscriptions - the most popular model nowadays

If you publish your app to the stores (Apple App Store and Google Play Store), you will most likely use in-app purchases. Unfortunately, those come with some hefty commissions (~30% for the first year).

Alternatively, if you sell some physical world products or services, you can accept payments outside of the Playstore, for which you would need a payment processor/gateway.

The most popular worldwide services currently available on the market are:



Particular local payment processors could be used in different countries that prohibit the use of global ones.

The payment providers fees and commission structure should fit your business model, especially micropayments, which would require finding a partner who can offer you a special deal.

We prefer Stripe because it is an independent payment provider and has very mature and convenient API and SDKs.

You don't need a tech partner to set up the account, but you will need to share API keys with your tech partner once it is live.

# Congratulations, you have finished reading this guide!

Use this checklist to check if you have all cloud services set up for your startup:

- DOMAIN**
  - Decide on a domain name
  - Purchase it
  - Find out if it's free
  - Find a DNS service provider
- EMAILS**
  - Set up an account with Google Workspaces
  - Set up an Amazon SES account
  - Apply for startup credits
- PLACE FOR YOUR CODE**
  - Choose code repository
  - Give access to your software provider
  - Set up an account
  - Connect Slack channel #updates
- HOSTING**
  - Apply for free credits from Google and Amazon if you have done so before
  - Set up hosting
- ANALYTICS**
  - Set up an account with Google Workspaces
  - Set up an Amazon SES account
  - Apply for startup credits

# Congratulations, you have finished reading this guide!

## ALERTING & MONITORING

- Set up an alerts system
- Connect it to the Slacks channel #alerts

## CRM

- Choose the system that suits your needs
- Set up an account
- Test it out

## CUSTOMER SUPPORT

- Set up an account
- Connect to the channel #alerts or #customer-conversations

## MONETIZATION

- Decide on a monetization type
- Select a payment processing provider
- Set up an account

By following these steps, you will get a robust and stable online cloud infrastructure that will support your company and online products in the long run, all without any hectic migrations and restructurings.

You can complete most of the steps discussed in the guide by yourself, but some of them require specific tech expertise. Get experts to assist you with some of these tasks as it will take less time, and in the scheme of things, setting up the proper channels will allow you to save money as well.

# Create Endless Possibilities of Growth With Apex Labs

Click on the button below and sign up for an hour of expert consultancy with Apex Labs' founder & main architect Alex.

This will give you an opportunity to discuss any topics regarding the choice of technology, the vision of your project, or any challenges you're facing, which we can help you overcome.

- *How can I automate DevOps and CI and save time and money?*
- *How can I migrate my platform to cloud?*
- *Is my tech future proof and do I need to consider any other frameworks?*

This will be credited towards your first invoice if you decide to continue with us.

PRICE ~~\$250~~ **\$80**

70% off - you save \$170

**Get tech consultancy for  
\$80**

