Telugu Bhasha Gyan - Cloud Hosting Cost Analysis

Project Overview

Telugu Bhasha Gyan - A comprehensive Telugu language learning platform with React frontend, Node.js backend, and MongoDB database.

Option 1: Render + Namecheap (Budget-Friendly)

For 50 Users (Small Scale)

Service	Provider	Plan Name	Monthly Cost (INR)	Yearly Cost (INR)	Features
Frontend	Vercel	Free Tier	₹0	₹0	100GB bandwidth, custom domains
Backend	Render	Free Tier	₹0	₹0	512MB RAM, 750 hours/month

Service	Provider	Plan Name	Monthly Cost (INR)	Yearly Cost (INR)	Features
Database	MongoDB Atlas	Free Tier (M0)	₹0	₹0	512MB storage, shared cluster
Domain	Namecheap	.com Domain	₹83	₹1,000	Free SSL, DNS management
TOTAL			**₹83**	**₹1,000**	

For 100 Users (Medium Scale)

Service	Provider	Plan Name	Monthly Cost (INR)	Yearly Cost (INR)	Features
Frontend	Vercel	Free Tier	₹0	₹0	100GB bandwidth, custom domains
Backend	Render	Starter Plan	₹415	₹4,980	512MB RAM, always on
Database	MongoDB Atlas	M2 Cluster	₹750	₹9,000	2GB storage, dedicated cluster
Domain	Namecheap	.com Domain	₹83	₹1,000	Free SSL, DNS management

Service	Provider	Plan Name	Monthly Cost (INR)	Yearly Cost (INR)	Features
TOTAL			**₹1,248**	**₹14,980**	

For 1000 Users (Large Scale)

Service	Provider	Plan Name	Monthly Cost (INR)	Yearly Cost (INR)	Features
Frontend	Vercel	Pro Plan	₹1,660	₹19,920	Unlimited bandwidth, team features
Backend	Render	Standard Plan	₹830	₹9,960	1GB RAM, always on
Database	MongoDB Atlas	M10 Cluster	₹4,730	₹56,760	10GB+ storage, production cluster
Domain	Namecheap	.com Domain	₹83	₹1,000	Free SSL, DNS management
TOTAL			**₹7,303**	**₹87,640**	

Option 2: Railway + Hostinger (Premium)

For 50 Users (Small Scale)

Service	Provider	Plan Name	Monthly Cost (INR)	Yearly Cost (INR)	Features
Frontend	Vercel	Free Tier	₹0	₹0	100GB bandwidth, custom domains
Backend	Railway	Starter Plan	₹415	₹4,980	512MB RAM, 1GB storage
Database	MongoDB Atlas	Free Tier (M0)	₹0	₹0	512MB storage, shared cluster
Domain	Hostinger	.com Domain	₹83	₹1,000	Free SSL, email hosting
TOTAL			**₹498**	**₹5,980**	

For 100 Users (Medium Scale)

Service	Provider	Plan Name	Monthly Cost (INR)	Yearly Cost (INR)	Features
Frontend	Vercel	Pro Plan	₹1,660	₹19,920	Unlimited bandwidth, team features

Service	Provider	Plan Name	Monthly Cost (INR)	Yearly Cost (INR)	Features
Backend	Railway	Standard Plan	₹1,660	₹19,920	2GB RAM, 10GB storage
Database	MongoDB Atlas	M2 Cluster	₹750	₹9,000	2GB storage, dedicated cluster
Domain	Hostinger	.com Domain	₹83	₹1,000	Free SSL, email hosting
TOTAL			**₹4,153**	**₹49,840**	

For 1000 Users (Large Scale)

Service	Provider	Plan Name	Monthly Cost (INR)	Yearly Cost (INR)	Features
Frontend	Vercel	Pro Plan	₹1,660	₹19,920	Unlimited bandwidth, team features
Backend	Railway	Performance Plan	₹4,150	₹49,800	4GB RAM, 50GB storage
Database	MongoDB Atlas	M10 Cluster	₹4,730	₹56,760	10GB+ storage,

Service	Provider	Plan Name	Monthly Cost (INR)	Yearly Cost (INR)	Features
					production cluster
Domain	Hostinger	.com Domain	₹83	₹1,000	Free SSL, email hosting
TOTAL			**₹10,623**	**₹127,480**	

Cost Comparison Summary

Yearly Cost Comparison

User Scale	Render + Namecheap	Railway + Hostinger	Savings
50 Users	**₹1,000**	**₹5,980**	**₹4,980 (83%)**
100 Users	**₹14,980**	**₹49,840**	**₹34,860 (70%)**
1000 Users	**₹87,640**	**₹127,480**	**₹39,840 (31%)**

Monthly Cost Comparison

User Scale	Render + Namecheap	Railway + Hostinger	Monthly Savings
50 Users	**₹83**	**₹498**	**₹415**

User Scale	Render + Namecheap	Railway + Hostinger	Monthly Savings
100 Users	₹1,248	₹4,153	₹2,905
1000 Users	₹7,303	₹10,623	₹3,320

Provider Details

Render (Backend Hosting)

- **Free Tier:** 512MB RAM, 750 hours/month
- **Starter:** ₹415/month - 512MB RAM, always on
- **Standard:** ₹830/month - 1GB RAM, always on
- **Pros:** Very cheap, easy deployment, good free tier
- **Cons:** Limited resources on free tier

Railway (Backend Hosting)

- **Starter:** ₹415/month - 512MB RAM, 1GB storage
- **Standard:** ₹1,660/month - 2GB RAM, 10GB storage
- **Performance:** ₹4,150/month - 4GB RAM, 50GB storage
- **Pros:** Better performance, more resources, auto-scaling
- **Cons:** More expensive

Namecheap (Domain)

- **.com Domain:** ₹1,000/year (~₹83/month)
- **Features:** Free SSL, DNS management, privacy protection

- **Pros:** Affordable, good customer support

Hostinger (Domain)

- **.com Domain:** ₹1,000/year (~₹83/month)
- **Features:** Free SSL, email hosting, website builder
- **Pros:** Additional email hosting included

Recommendations

For Budget-Conscious Users:

- **Choose:** Render + Namecheap
- **Best for:** Startups, small businesses, personal projects
- **Savings:** Up to 83% compared to Railway option

For Performance-Focused Users:

- **Choose:** Railway + Hostinger
- **Best for:** Growing businesses, high-traffic applications
- **Benefits:** Better performance, more resources, auto-scaling

For 50 Users:

- **Recommended:** Render + Namecheap
- **Reason:** Free tier covers all needs, minimal cost

For 100 Users:

- **Recommended:** Render + Namecheap
- **Reason:** Significant cost savings with adequate performance

For 1000 Users:

- **Recommended:** Railway + Hostinger
- **Reason:** Better performance and resources for high traffic

Setup Instructions

Render + Namecheap Setup:

1. Buy domain from Namecheap
2. Deploy frontend to Vercel
3. Deploy backend to Render
4. Set up MongoDB Atlas cluster
5. Configure environment variables
6. Point domain to Vercel

Railway + Hostinger Setup:

1. Buy domain from Hostinger
2. Deploy frontend to Vercel
3. Deploy backend to Railway
4. Set up MongoDB Atlas cluster
5. Configure environment variables
6. Point domain to Vercel