

# A/B Testing for API Data using Firebase in React & Django

Link-> <https://chatgpt.com/canvas/shared/67d16fbef8b48191bda41e142b8031bc>

## 1. Configure Firebase Remote Config for API A/B Testing

- Go to **Firebase Console** > **Remote Config**.
- Create a parameter:
  - **Parameter Name:** api\_variant
  - **Values:** "A" (API Endpoint A), "B" (API Endpoint B)
- Use **A/B Testing** in Firebase to distribute variants.

## 2. Fetch API Variant in React Frontend

### Install Firebase Remote Config

```
npm install firebase/remote-config
```

### Fetch API Variant in React

```
import { initializeApp } from "firebase/app";
import { getRemoteConfig, fetchAndActivate, getValue } from "firebase/remote-config";
import { useState, useEffect } from "react";

const firebaseConfig = {
  apiKey: "YOUR_API_KEY",
  authDomain: "YOUR_AUTH_DOMAIN",
  projectId: "YOUR_PROJECT_ID",
  storageBucket: "YOUR_STORAGE_BUCKET",
  messagingSenderId: "YOUR_MESSAGING_SENDER_ID",
  appId: "YOUR_APP_ID"
};

const app = initializeApp(firebaseConfig);
const remoteConfig = getRemoteConfig(app);
remoteConfig.settings.minimumFetchIntervalMillis = 3600000; // 1 hour
```

```

const fetchData = async () => {
  await fetchAndActivate(remoteConfig);
  const variant = getValue(remoteConfig, "api_variant").asString();
  const apiUrl = variant === "A" ? "/api/data-version-a" : "/api/data-version-b";

  const response = await fetch(apiUrl);
  const data = await response.json();
  console.log("Fetched Data:", data);
};

fetchData();

```

### **3. Modify Django Backend to Serve Different API Variants**

#### **Django Views Example**

```
from django.http import JsonResponse
```

```

def get_data_version_a(request):
  data = {"version": "A", "items": ["Item A1", "Item A2", "Item A3"]}
  return JsonResponse(data)

```

```

def get_data_version_b(request):
  data = {"version": "B", "items": ["Item B1", "Item B2", "Item B3"]}
  return JsonResponse(data)

```

#### **Django URL Configuration**

```
from django.urls import path
from .views import get_data_version_a, get_data_version_b
```

```

urlpatterns = [
  path("api/data-version-a", get_data_version_a, name="data_a"),
  path("api/data-version-b", get_data_version_b, name="data_b"),
]

```

### **4. Track A/B Testing Results**

### Track API Variant Usage in Firebase Analytics

```
import { getAnalytics, logEvent } from "firebase/analytics";  
  
const analytics = getAnalytics(app);  
  
logEvent(analytics, "api_variant_assigned", {  
  variant: "A", // or "B"  
});
```

### 5. Analyze Firebase A/B Test Results

- In **Firebase Console > A/B Testing**, monitor:
  - User engagement per variant
  - Conversion rates
  - API call performance

#### Summary

- ✓ **Firebase Remote Config** controls API variant (A or B).
- ✓ **React app fetches the assigned variant** before calling the API.
- ✓ **Django backend serves different API responses** for each variant.
- ✓ **Firebase Analytics tracks the results** for comparison.