

# HTTP Request Sampler (The Heart of JMeter)

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## 1. What is an HTTP Sampler?

The **HTTP Request Sampler** is the component that actually **calls an API or website**.

If JMeter were a human:

- Thread Group = how many people
- Timer = how fast they walk
- **HTTP Sampler** = the phone call they make

Without HTTP Sampler → **nothing happens**

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## 2. Real-World Mapping

Real System	JMeter
Frontend / Mobile App	JMeter
API Endpoint	HTTP Sampler
Request Payload	Body Data
Query Params	Parameters
Headers (Auth, Content-Type)	Header Manager
Response	Sampler Result

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## 3. Types of HTTP Requests

### Common Methods

Method	Use Case
GET	Fetch data
POST	Create / submit data
PUT	Update data
DELETE	Remove data

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### Example (Login API)

```
POST /api/login
```

Body:

```
{
  "username": "user1",
  "password": "pass123"
}
```

## 4 Anatomy of an HTTP Sampler

### Core Fields

Field	Meaning
Protocol	http / https
Server Name	api.example.com
Port	80 / 443
Method	GET / POST
Path	/api/login

### Example Setup

```
Protocol: https
Server Name: auth.company.com
Method: POST
Path: /ciam/login
```

## 5 Parameters vs Body Data (VERY IMPORTANT)

### Parameters Tab

Used when:

- GET request
- Query strings

Example:

```
GET /profile?id=123
```

Name	Value
id	123

### Body Data Tab

Used when:

- POST / PUT
- JSON or XML payload

Example:

```
{
  "email": "test@abc.com",
  "otp": "123456"
}
```

⚠ Never mix Parameters + Body for JSON APIs

## 6 Content-Type Header (Mandatory for APIs)

Without this → API may fail silently.

Add via **HTTP Header Manager**:

```
Content-Type: application/json
```

## 7. Authentication Patterns

### 1. Basic Auth

Configured directly in HTTP Sampler (rare in modern APIs)

### 2. Token-based Auth (MOST COMMON)

Flow:

1. Login API → returns token
2. Extract token
3. Send token in headers for next APIs

Header example:

```
Authorization: Bearer ${token}
```

## 8. One Sampler = One Business Action

Bad Practice:

```
Login + Profile + Submit in one sampler
```

Correct:

```
Login Sampler  
Profile Sampler  
Submit Sampler
```

This helps:

- Debugging
- Reporting
- Correlation

## 9. Common Beginner Mistakes

Putting full URL in Path • Forgetting Content-Type • Using GET with Body • Hardcoding tokens • Testing without View Results Tree

## • Debugging HTTP Sampler

Use:

- View Results Tree
- Request tab
- Response tab
- Headers tab

Ask:

- Did request go out?
- Is payload correct?
- Is status code valid?
- Is response JSON valid?

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## 1.1 Performance Tip

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For load tests:

- Disable View Results Tree
  - Enable Summary Report / Backend Listener
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## 1.2 Interview-Level Question

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Q: Why do we avoid putting HTTP Samplers directly under Test Plan?

A: Because they won't inherit config elements correctly and cause unpredictable execution.

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## 1.3 Mini Exercise (Give to Student)

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1. Create HTTP Sampler
  2. Call a public GET API
  3. Print response
  4. Change to POST
  5. Send JSON payload
  6. Validate status code
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## Summary

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✓ HTTP Sampler = actual API call ✓ One sampler per business action ✓ Parameters ≠ Body ✓ Headers are mandatory ✓ Debug before load

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