Pricing Calculator for Thermostat Project

Oskar Przybyl
Yardiel Lopez
Mehmet Ali Kurnaz
Salih Demir

We need only 4 Azure services:

Azure IoT Hub – devices send data (MQTT)
Azure App Service – backend API & logic
Azure SQL Database – users, devices, settings
Azure Storage Account – logs & telemetry history

Some basic assumptions

-1,000 devices
-Each device sends 1 message per minute
-43,200 messages per device per month

IoT Hub Standard S1

Base price: €22 / month

Extra messages: ≈ €15 / month

Backend API (Azure App Service)

Used for:
-Customer dashboard
-Device status
-Thermostat logic

Choice
- App Service – Basic B1 (Linux)

Basic Service Plan	Cores	RAM	Storage	Pay as you go
B1	1	1.75 GB	10 GB	$13.140/month

App Service Cost
Copy code
Is around maximum - €50 / month

Database Cost (300 Customers)

Stores:

-Customers
-Devices
-Temperature history
-Settings

Choice

Azure SQL Database – Basic tier

Minimum vCores	Maximum vCores	Minimum Memory (GB)	Maximum Memory (GB)	Price
0.5	80	2.05	240	$0.0001050/vCore-second ($0.378/vCore-hour)

Database Cost
Maximum -€15 / month

Storage (Logs & Telemetry)

Used for:

-Historical temperature data
-Logs
-Backups

Choice

-Azure Blob Storage

Data storage prices pay-as-you-go

All prices are per GB per month.

Data storage prices pay-as-you-go	Premium	Hot	Cool	Cold	Archive
First 50 terabyte (TB)/month	$0.15 per GB	$0.018 per GB	$0.01 per GB	$0.0036 per GB	$0.002 per GB

Cost

Maximum around - €2 / month
Storage Cost
Also Max of around - €2 / month

Monitoring & Logs

-Azure Monitor (basic usage)

Cost
Maximum of around €5 / month

Total Monthly Cost

Azure IoT Hub	€37
App Service	€50
SQL Database	€15
Storage	€2
Monitoring	€5
TOTAL	€109 / month

Cost Per Customer

€109 ÷ 300 customers is more or less €0.36 per customer / month

Quick Conclusion

The estimated monthly cost of running the Smart Thermostat IoT system on Microsoft Azure for 1,000 devices and 300 customers is approximately €109 per month, which corresponds to €0.36 per customer, making the solution cost-effective and scalable.