[HIGH] CPU Alarm Analysis: Instance i-097bf8bf5e21f9d52 (TEST_CLOUDWATCH_SERVER_TEAM4_CPU#80)

aditya.d@cloudworkmates.com | 5:52 PM | 4 minute(s) read

CPU Alarm Analysis Report - HIGH

Instance: i-097bf8bf5e21f9d52 in us-west-2

Alarm Name: TEST_CLOUDWATCH_SERVER_TEAM4_CPU#80

Summary

EC2 instance i-097bf8bf5e21f9d52 in us-west-2 triggered a CPU utilization alarm at 12:17:00Z with 89.78% CPU usage, exceeding the 80% threshold. The instance shows volatile CPU patterns over the past few hours, alternating between very low usage (<1%) and high spikes (80-90%), indicating potential workload bursts or resource contention.

Advice

This CPU spike pattern suggests either batch processing jobs, inadequate instance sizing for workload demands, or potential resource contention. The volatile nature (ranging from <1% to 90%) indicates the workload may be bursty rather than sustained high utilization. Immediate investigation should focus on identifying the processes causing these spikes and determining if this is expected behavior or indicates a performance issue that requires scaling or optimization.

Key Findings (Raw)

```
{
  "alarm_state": "ALARM",
  "current_cpu": 89.78,
  "instance_id": "i-097bf8bf5e21f9d52",
  "pattern_analysis": {
    "baseline_cpu": "<1%",
    "last_hour_range": "0.17% - 89.78%",
    "spike_frequency": "Multiple spikes above 70%",
    "volatility": "Very High"
  },
  "region": "us-west-2",
  "threshold": 80.0,
  "trigger_time": "2025-10-29T12:17:00Z"
}
```

Recommendations

- **Investigate current processes** (Priority: P0, Effort: low)
  What: Connect to the instance and identify which processes are consuming CPU during spike periods using top, htop, and process monitoring
  Why: Need to determine if high CPU is from legitimate workload or runaway processes

- **Review application logs** (Priority: P0, Effort: low)
  What: Check application and system logs around 12:17:00Z and previous spike times to correlate CPU usage with specific events or errors
  Why: Logs may reveal if spikes are caused by scheduled jobs, error conditions, or normal processing

- **Implement detailed monitoring** (Priority: P1, Effort: medium)
  What: Enable CloudWatch detailed monitoring and install CloudWatch agent for per-process CPU metrics to better understand usage patterns
  Why: Current 5-minute intervals may miss important details about CPU spike patterns and root causes

- **Evaluate instance sizing** (Priority: P2, Effort: medium)
  What: Analyze if current instance type is appropriate for workload patterns, consider burstable instances (T3/T4g) if spikes are infrequent
  Why: Volatile CPU patterns may indicate either over-provisioning during low periods or under-provisioning during spikes

- **Configure auto-scaling** (Priority: P2, Effort: high)
  What: If this is part of an ASG, review scaling policies and consider implementing predictive scaling for known workload patterns
  Why: Automated scaling can handle predictable CPU spikes more efficiently than manual intervention

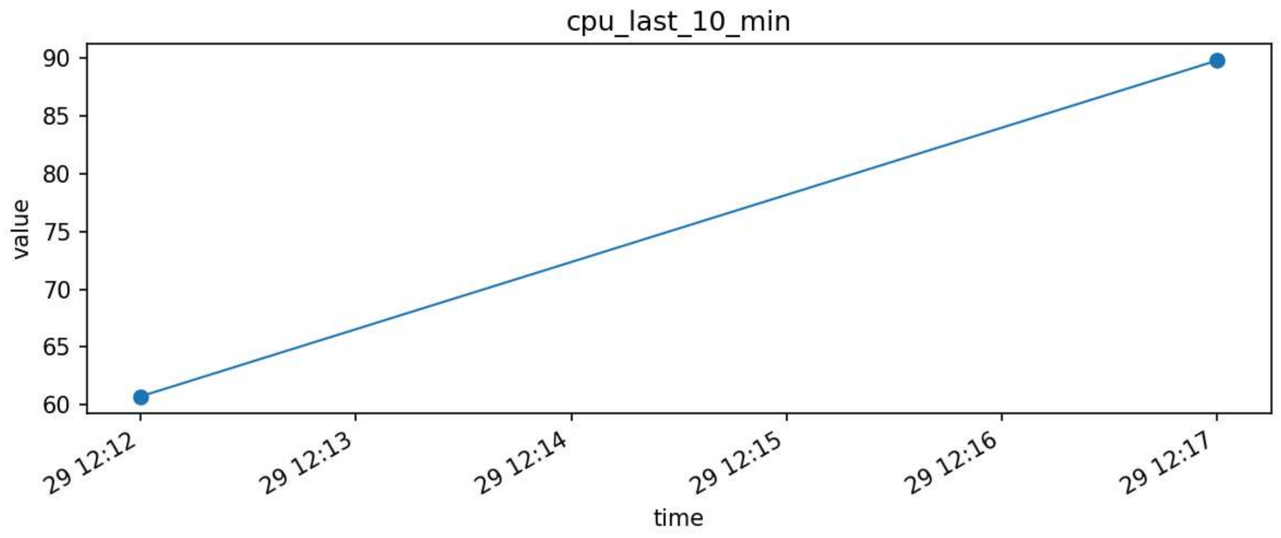
---

Diagnostic Commands

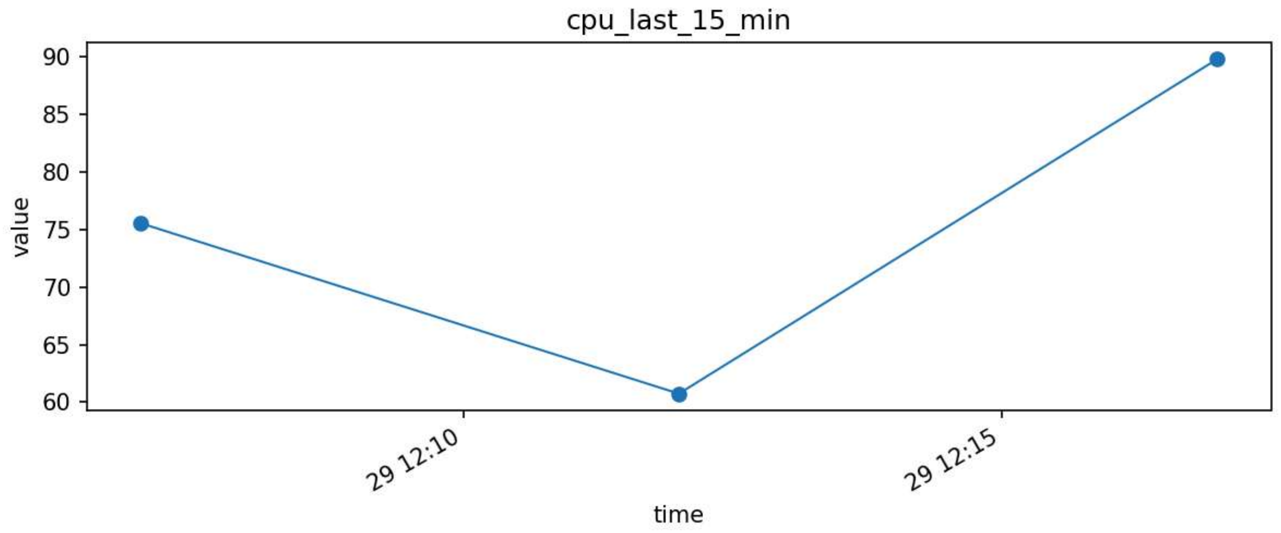
- aws ec2 describe-instances --instance-ids i-097bf8bf5e21f9d52 --region us-west-2
- aws cloudwatch get-metric-statistics --namespace AWS/EC2 --metric-name CPUUtilization --dimensions Name=InstanceId,Value=i-097bf8bf5e21f9d52 --start-time 2025-10-29T12:15:00Z --end-time 2025-10-29T12:20:00Z --period 60 --statistics Average,Maximum --region us-west-2
- ssh -i your-key.pem ec2-user@instance-ip 'top -b -n 1'
- ssh -i your-key.pem ec2-user@instance-ip 'ps aux --sort=-%cpu | head -20'
- ssh -i your-key.pem ec2-user@instance-ip 'journalctl --since "2025-10-29 12:15:00" --until "2025-10-29 12:20:00"'
- ssh -i your-key.pem ec2-user@instance-ip 'iostat -x 1 5'
- ssh -i your-key.pem ec2-user@instance-ip 'free -h'
- aws logs describe-log-groups --region us-west-2 | grep -i i-097bf8bf5e21f9d52

Plots

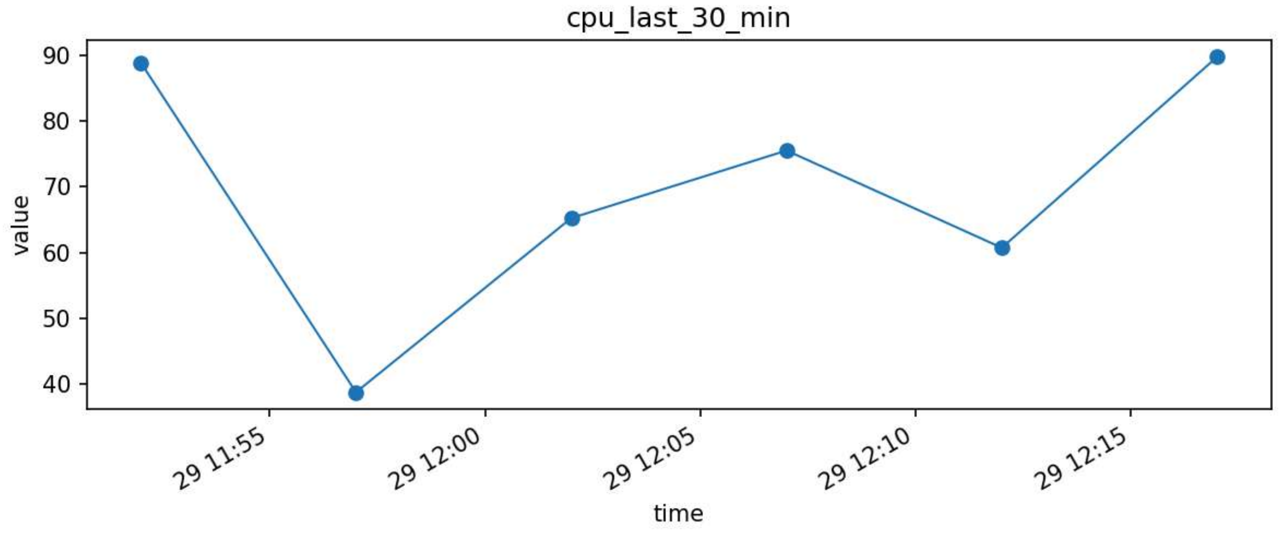
cpu_last_10_min



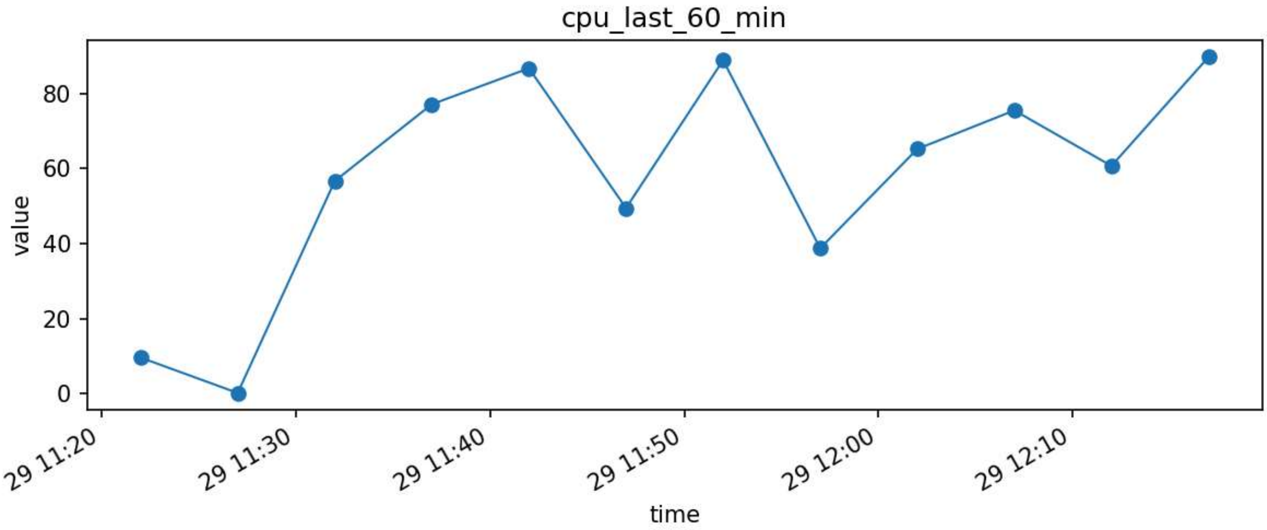
cpu_last_15_min



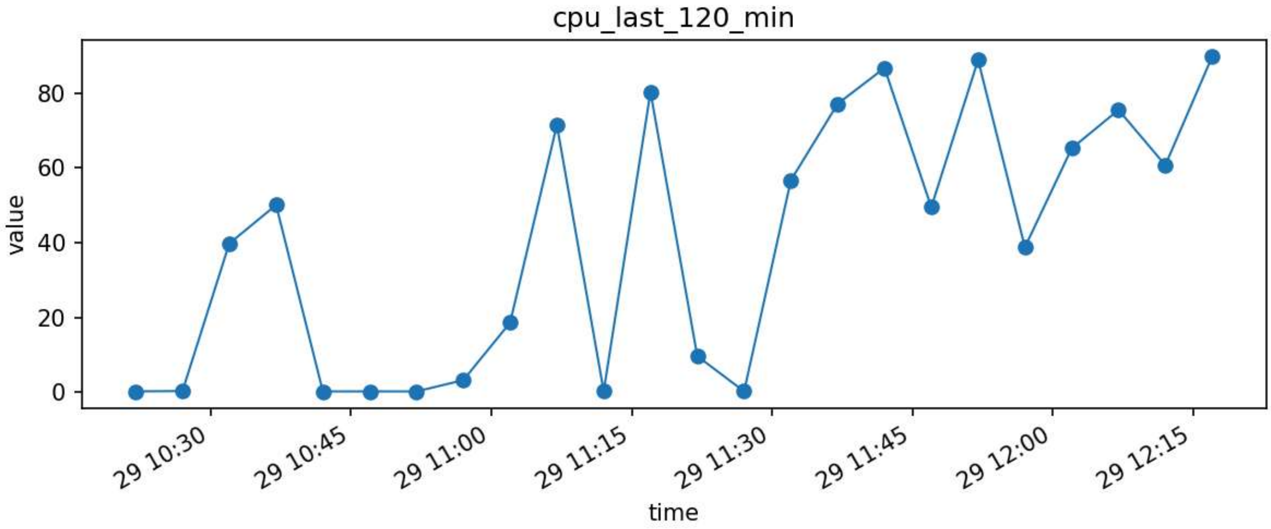
cpu_last_30_min



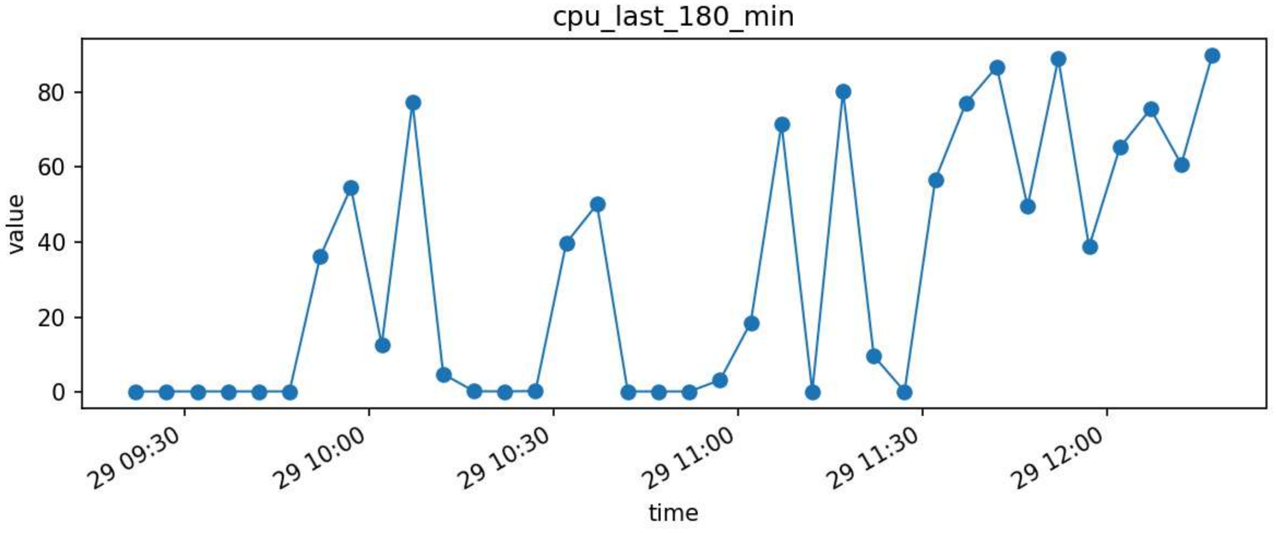
cpu_last_60_min



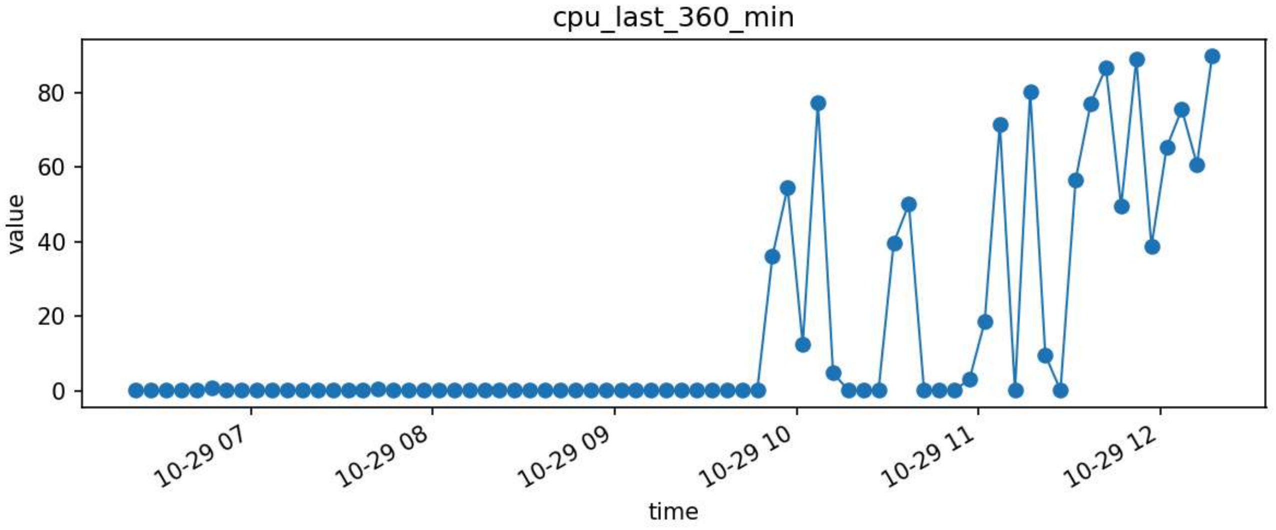
cpu_last_120_min



cpu_last_180_min



cpu_last_360_min


cpu_last_360_min
value
time