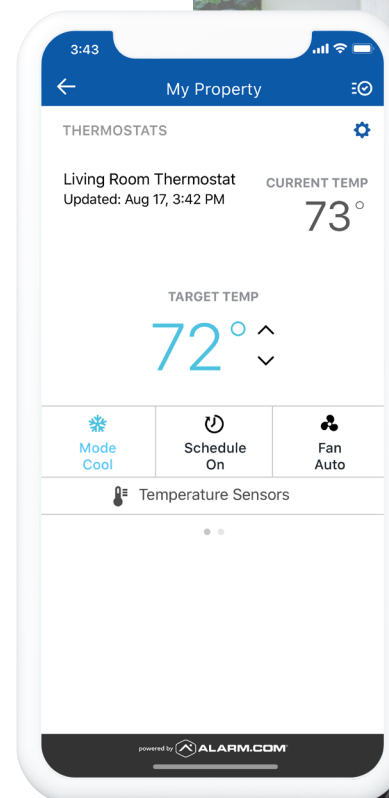


POINTCENTRAL HVAC Management

HVAC Management transforms how heating and cooling malfunctions are recognized and dealt with before they become costly repairs or replacements. It empowers property managers and owners to recognize issues and proactively protect their HVAC systems. This technology is becoming another essential component to the modern smart home. Here is everything there is to know about HVAC Management.



Alert System

HVAC Management collects and analyzes data on property heating, ventilation, and air conditioning.

At the basic level, these analytics compare the current temperature in the home to the desired or set temperature demanded by the property manager. If there is a significant discrepancy between the two over an extended period, managers receive an alert through the PointCentral app associated with their smart properties. PointCentral's alerts may also be sent by email or text, providing instant notification to users to promptly address their HVAC issues. Some common notifications include:

Unusual HVAC usage patterns, suggesting user thermostat malpractice

Recurring or seasonal reminders to replace filters and other vital components

Significant temperature differences that suggest system failure and require immediate response

 POINTCENTRAL

now

Rental Home: The thermostat reported a potential heating & cooling system failure. Contact XYZ HVAC for service.



For Property Managers

HVAC Management is enabled by Alarm.com Smart Thermostats. Unlike other thermostats, the Smart Thermostat performs HVAC analysis in addition to the basic temperature setting functionality. Property managers can remotely control the temperature, set temperature schedules, and receive alerts and reports about their HVAC systems through the PointCentral platform. In receiving such warnings, property managers increase operational efficiency, protect vital assets, and can be proactive about HVAC repair and keeping tenants comfortable.

Reduce operational costs.

HVAC alerts flag minor issues so they can be solved promptly. HVAC analysis also informs property managers of inefficient units to prevent accelerated wear-and-tear and “hidden” HVAC failures that residents may not report. Together, these alerts reduce the frequency of critical HVAC system failures, which often require costly replacements. Additionally, consistent monitoring and care increase the lifespan of an HVAC system, meaning less overhead spent on acquiring new systems.

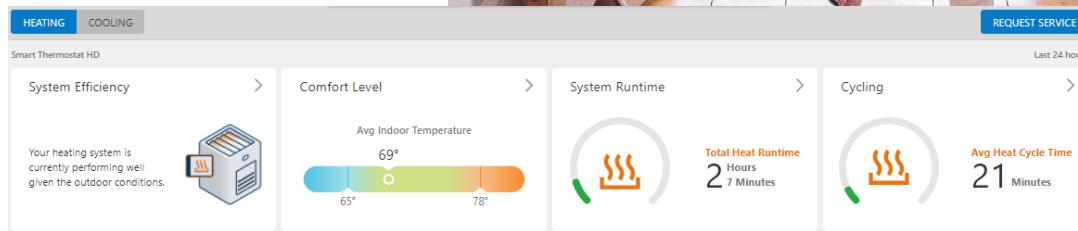


Facilitate efficient maintenance.

Property managers and residents have access to monthly health reports and system performance dashboards. At a glance, they can stay aware of how much energy they're using over time and the general health of their HVAC system. For example, the system performance dashboard displays information about the system's efficiency given the outdoor temperature and average cycle time to heat or cool the home. With the help of system alerts, property managers can schedule timely repairs and equip HVAC technicians with valuable data such as when the issue began and how severe the temperature discrepancy was. With insights like this, HVAC technicians can be more efficient and productive at resolving any issues. With the data collected by the monitoring system, such as when the error began and how severe the temperature discrepancy is.

Improve resident satisfaction.

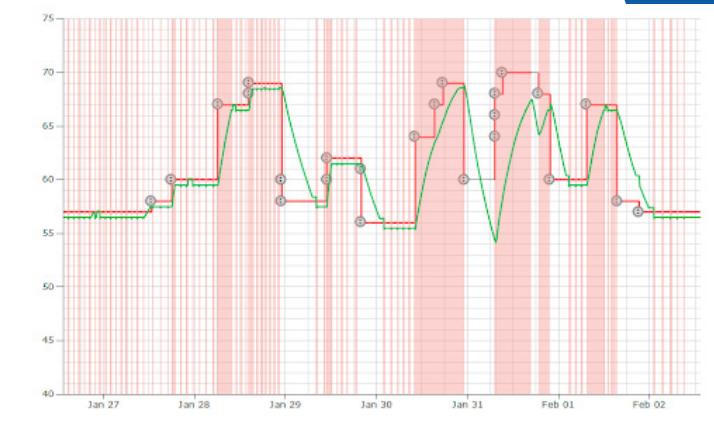
Property managers can detect and fix issues within hours of the alert, often before residents know the system is broken. This allows managers to proactively serve residents and ease the influx of demand for HVAC repairs on the first hot/cold days of the year, when HVAC systems are most likely to fail. Managers can also prevent high energy bills caused by inefficient units, in addition to the energy-saving schedules that can be configured with the Smart Thermostat. Basic HVAC monitoring maintains the standard experience that residents and renters expect.



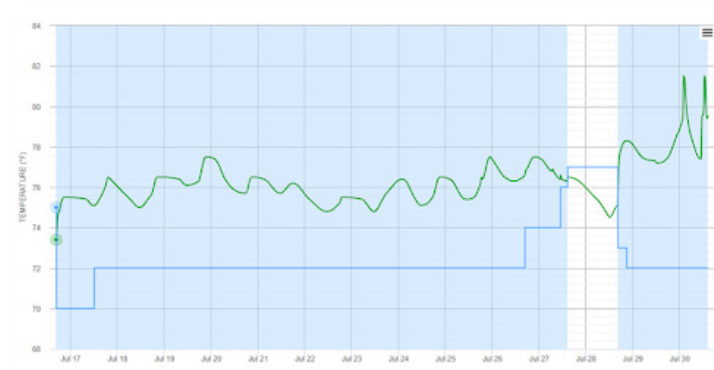
For Service Providers

Help customers protect their HVAC assets with real-time analytics.

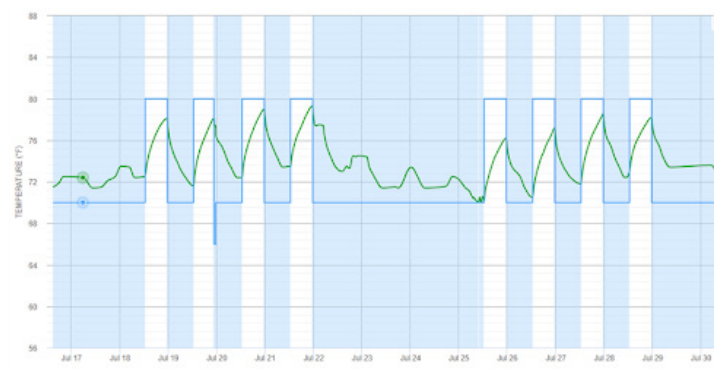
This is what a healthy heating system looks like with HVAC Management. Note the gradual changes in the temperature in green corresponding with the desired temperature set by the manager in red. The red shading represents the time periods in which the heating programs were run.



This is an HVAC system failure with the desired temperature in blue and system temperature in green. Note how the indoor temperature rises and falls in accordance with daily outdoor temperature fluctuations. The blue shading represents the time periods in which the cooling programs were run.



This unhealthy system loosely follows the set temperature over lengthy periods of time. Note how the shaded regions take at least half of a day to approach the desired temperatures and at worst, over three days. Additionally, the HVAC system in most cases did not achieve the desired temperature, indicating an issue.



Case Studies

Below are case studies detailing how HVAC Management has helped rental property managers and HVAC contractors.

BH Multifamily

BH Management is a large multifamily housing provider based in the United States. They own thousands of apartment complexes across the country. As a longtime PointCentral customer, BH Management was given a test run of the HVAC analytics engine. Approximately 3,700 of BH Management's HVAC systems were reviewed. 42 systems were identified as potentially broken or not working properly, about 1% of the surveyed systems.

Most of these malfunctioning systems had gone unnoticed either because residents had not yet complained or weren't aware that their systems were underperforming. In both cases, the HVAC issues significantly increased energy costs and would have posed greater risks for long term damage, requiring replacement. Based on the discrepancies, PointCentral recommended training for BH's facilities director and managers and integrating with BH's task management system to include HVAC data into relevant maintenance workflows.



Vacation Homes

In January of 2020, a couple using HVAC Management were vacationing in Mexico when they received a severe heating alert for their lake house in Speculator, New York. The alert reported that indoor temperatures had dropped below 50 degrees Fahrenheit. The couple immediately requested that an HVAC company inspect the house. They found a faulty valve which had caused the furnace to shut down. The HVAC company replaced the valve and recommended replacing the oil heating system with a propane-based system instead. A week later, the same couple received an HVAC severe heating alert from their beach house in Ocean City, New Jersey. Again, they requested that an HVAC company visit the house; they found a broken hot surface igniter which they then replaced.

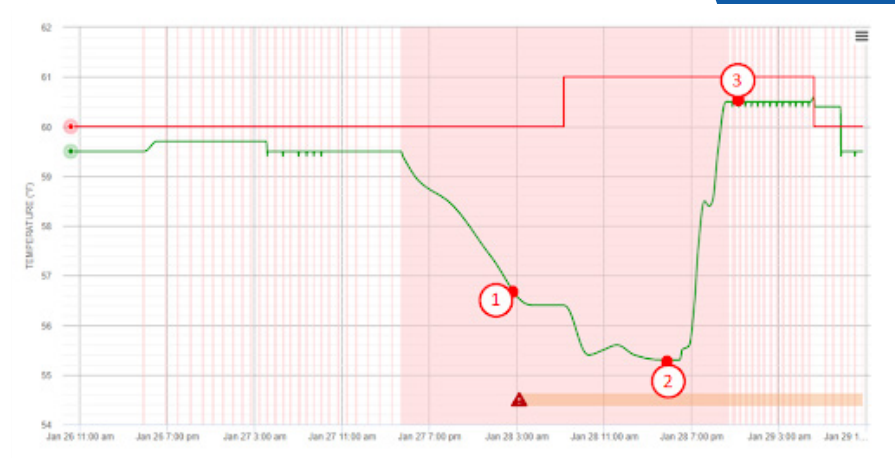
HVAC Management allowed the couple to resolve critical system malfunctions at their rental properties within a matter of hours, even while traveling. Had the HVAC analytics not been available for their rental properties, the broken heating systems would have gone unnoticed for months in the vacation offseason. This could have resulted in frozen or leaking pipes which cause significantly expensive water damage and would have ensured negative experiences for future renters. The graphs taken from both vacation homes on the next page highlight how HVAC Management helped diagnose and resolve HVAC related issues.



Vacation Homes (cont'd)

BEACH HOUSE

1. HVAC alert sent Tuesday (1/28) morning: "Indoor temperatures dropped to the low 50s - risk of frozen pipes"
2. HVAC company discovers and replaces faulty hot surface igniter
3. The indoor temperature returns to normal



LAKE HOUSE

1. Initial HVAC alert sent Tuesday (1/21) morning: "Indoor temperatures dropped into the 40s - high risk of frozen pipes"
2. The maintenance team arrives and finds the furnace disabled; they reset the furnace
3. HVAC company arrives to service the furnace
4. Indoor temperature stabilizes and the heating system seemingly returns to normal
5. Another HVAC alert sent early Wednesday morning
6. HVAC company returns to find the furnace disabled again; they discover the faulty valve
7. HVAC company completes replacement of the faulty valve
8. Indoor temperature restabilizes and the heating system returns to normal

