Customer Story

AllCloud | NETAFIM™

A Leader in Precision Irrigation Builds Revolutionary Digital Farming Solution from Scratch on AWS

ABOUT NETAFIM

Netafim is the global leader in precision irrigation for a sustainable future. With 29 subsidiaries and 17 manufacturing plants worldwide, Netafim delivers innovative, tailor-made irrigation and fertigation solutions to millions of farmers, allowing smallholders to large-scale agricultural producers, in over 110 countries to grow more with less. Founded in 1965, Netafim pioneered the drip revolution, creating a paradigm shift toward precision irrigation. Today, specializing in end-to-end solutions from the water source to the root zone, Netafim delivers turnkey irrigation and greenhouse projects, supported by engineering, project management and financing services.

The Challenges of Growing Global

There are two key trends that any agricultural innovator should be aware of:

1. **Stakeholders across the industry are looking to grow more with less.** The population is increasing fast, and arable land is decreasing. The challenges of climate change and extreme weather mean that the techniques of the past are no longer sustainable.
2. **There is a digital revolution happening that affects every industry.** Agriculture and irrigation both need to adopt cloud computing, remote management and control, as digital farming is a reality for any forward-thinking business.

As the world leader in precision irrigation, Netafim wanted to leverage their 55 years of expertise and take it to the next level – digital farming with NetBeat™

The infrastructure needed to be:

Highly available:

Devices, satellites, sensors and external sources would be continuously sending data to the cloud, in structured and unstructured forms. Any break in service or loss of data could damage the business insights and crop-specific recommendations being sent to the farmers. When it comes to agriculture, these systems are mission-critical. One bad crop could cause a lost season, which could lead to a farmer losing their livelihood altogether.

Scalable and Cost-effective:

Netafim needed an entirely new deployment, a durable solution that affordably supported quick and wide growth, meeting the needs of hundreds of thousands of customers and their devices and data without the need for regular changes in architecture.

Collaborative and Connected:

supported collaboration with other players in the agricultural market. A place where they could share their industry-leading knowledge and learn from others, with two-way communication between the company and its customers for upgrades/fixes and support

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The AllCloud Solution for NetBeat™

AllCloud and Netafim built a cloud infrastructure from the ground up. This happened in three key phases:

1. Building the Netafim application on AWS
2. Securing this infrastructure using AWS Landing Zone
3. Cloning the application to make it easy to distribute in new regions

1. Building the application

AllCloud used their own best practices and AWS technology to create a highly available solution that could manage an immense scale.

Netafim now has NetBeatTM a system that continuously gathers information in a live environment. At all times, NetBeatTM is calibrating data algorithms to provide more accurate recommendations for its customers. These are calculated against business goals such as minimizing and optimizing the use of water and fertilizer and increasing overall yields.

Using AWS IoT, the NetBeat™ data is processed using AWS Kinesis. Kinesis can process hundreds of terabytes of Big Data in real time. When the amount of data exceeds the limits of an application, Kinesis stores the data in a queuing system that ensures nothing is lost. If an application sends data to the cloud, even in the case of service unavailability or failure, the data is saved.

AllCloud also utilized AWS Lambda. This choice management system allows NetBeat™ to support customers in how they choose to organize their data as it enters the centralized computer system on the cloud. It runs code in response to events, so that businesses can choose where their information should be sent, and when, with event-driven context.

NetBeat™ now has a fully automated process. With a few clicks, the company can have a new application up and running, decreasing the time and manpower spent on deployment. An auto-scaling solution, it is no longer limited or fragile, but highly available and durable.

"We can now provide the best possible service to our customers, pushing updates, managing their data and troubleshooting their queries, all with remote connection and support. Historically we might have had to travel to a field to implement a specific device update, which could have been an eight-hour journey. Now, it's automatic."

2. Securing the infrastructure

AWS Landing Zone is a totally secure environment, so NetBeat™ has valuable data and access in hand to avoid any downtime due to a hack or locked account. Some examples of separation include:

- Separating production and development for best practice security
- Creating a 'Vault' account with the most sensitive and critical data
- Building an account for disaster recovery where essential applications can be cloned
- Keeping logs about application infrastructure in case of a regulatory audit

By separating key components into different accounts, Netafim now has more control over where everything is. Only the key stakeholders can access each account, on a need-to-know basis. With a secure tunnel from the field to the cloud established by AllCloud, Netafim has now secured their customers' data.

3. Cloning the application

One of the most important factors of moving to the cloud for Netafim was the ability to grow globally. There are many challenges around introducing an irrigation solution abroad, such as regulations around data sharing, or the technical steps needed to clone the application itself.

AllCloud has successfully cloned the NetBeatTM application by writing infrastructure code. This is easy to distribute to other regions, reducing the time it takes for the company to deploy abroad from days or weeks, to hours. Expanding globally is now a realistic point on the company roadmap.

The Results

Entirely tailor-made and highly available: Made to requirement and infinitely scalable, NetBeat™ benefits from complex data algorithms from as many devices as necessary, without the fear of bottlenecks or loss of data.

"Thanks to AllCloud, we have given our customers the ability to manage everything from their fingertips. Remote access from their cell phone gives the farmer ultimate peace of mind knowing they can manage their farming remotely, just as if they were in the field itself."

Izhar Gilad, Head of Commercial & Business Development

Digital Farming

- **Seamlessly automated:** Continuous integration and delivery pipelines enable Netafim to work independently. A bi-directional interface means that data can be sent to and from the cloud, supporting both Netafim and their customers.
- **Cost-optimized:** Cost optimization sessions allowed AllCloud's architects to choose the right instance types according to the actual load, paying for only what they use.
- **Inherently secure:** With AllCloud's AWS Landing Zone, NetBeat™ has a secure platform which protects sensitive customer data. Best practices have been used to create accounts with the principle of least privilege, improving NetBeat™'s security posture in case of a breach or system failure.
- **Ultimately collaborative:** "A key benefit has been our ability to grow, add more services, and integrate with other players and parties in the agriculture ecosystem." By embracing a cloud infrastructure, Netafim has a collaborative platform that lets them share their industry-leading know-how and learn from others.

Interested in learning more about becoming a cloud-enabled company? Consult with an AWS certified cloud architect.