

# Unifying City Operations and Accelerating Applications with Cisco HyperFlex

**Size: 800 employees · Industry: Public sector · Location: Pearland, Texas**

Pearland is one of the fastest growing cities in the United States. From 2000 to 2018, the population of the Houston, Texas, suburb swelled from 37,000 citizens to more than 122,000. The community has one of the highest per capita incomes in the state and provides a wide range of attractive and affordable housing in some of America's best planned neighborhoods. For more information, visit [pearlandtx.gov](http://pearlandtx.gov).



## Challenges

- Modernize and integrate the city's IT infrastructure
- Increase operational insight, efficiency, and automation
- Improve data protection

## Solutions

- Cisco HyperFlex™ system
- Cisco Nexus® 9000 Series switches
- Cisco Umbrella®
- Cisco Stealthwatch®
- Cisco® Advanced Malware Protection (AMP)
- Cisco Cloudlock
- Cisco Adaptive Security Appliance (ASA)

## Results

- Accelerated application performance by 30 to 50 percent
- Reduced infrastructure maintenance tasks from weeks to hours
- Leveraged IoT and other smart city solutions to improve municipal services

## For more information

- [Cisco HyperFlex](#)
- [Cisco Nexus 9000 Series switches](#)
- [Cisco Umbrella](#)
- [Cisco Stealthwatch](#)
- [Cisco AMP](#)
- [Cisco Cloudlock](#)
- [Cisco ASA](#)

## Challenge: Modernize, integrate city networks and data center systems

When Daniel McGhinnis was hired in 2015 as the Chief Information Officer of Pearland, Texas, he faced a monumental task. His boss, City Manager Clay Pearson, was eager to modernize city operations and develop new municipal services. But an aging and heavily siloed collection of technologies was incapable of supporting such ambitions—or the rapid, ongoing growth of the city.

“We were definitely behind the eight-ball with technology,” McGhinnis recalls. “We had multiple disparate networks and different physical servers supporting each department.”

Before he could leverage Internet of Things (IoT), advanced water meter technology, and GIS with 3D rendering to help improve city operations, McGhinnis knew he needed a better technology infrastructure. One that is tightly integrated, highly automated, and seamless for the end user. One that can support each city department and their unique applications. And one that is able to progressively scale with Pearland’s rapidly expanding community.

After deploying a unified network platform, Pearland chose Cisco HyperFlex as the foundation of its data center and engine for its municipal services.

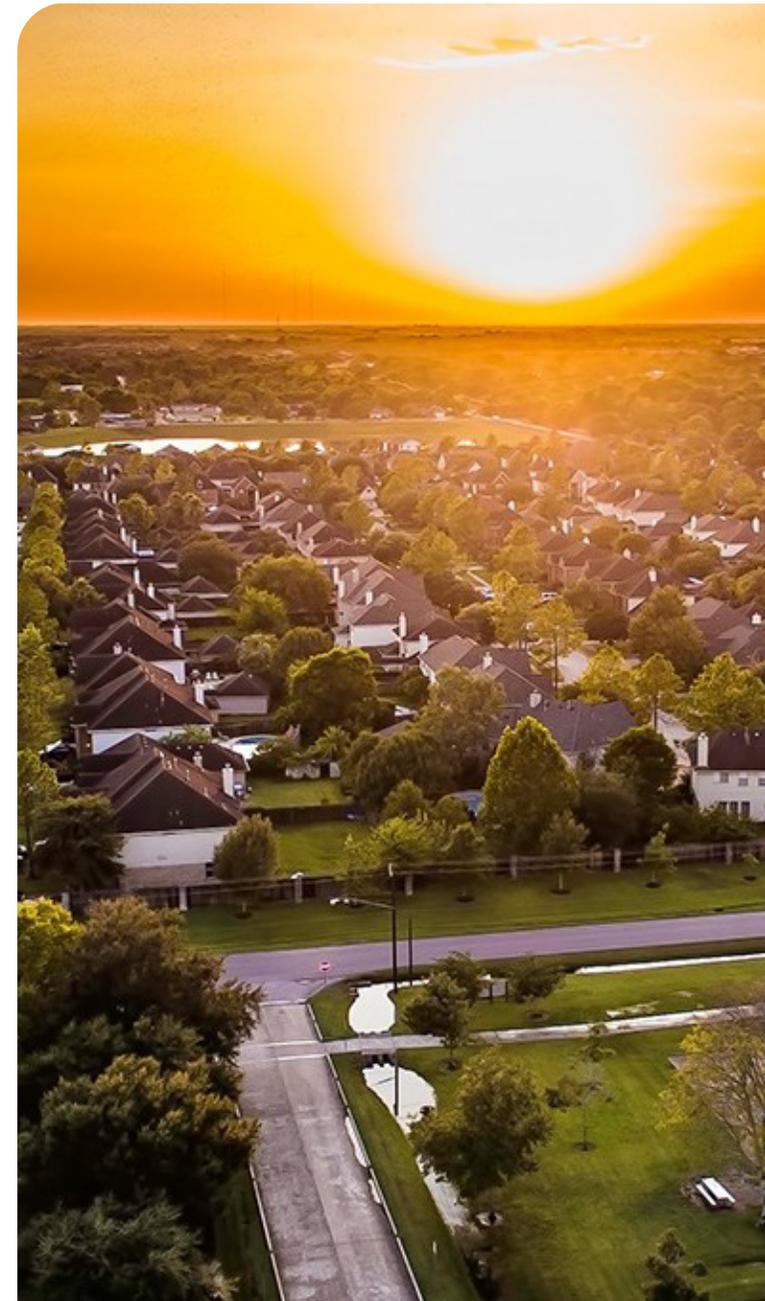
“Making the transition from traditional infrastructure to Cisco HyperFlex has been a great journey for us,” McGhinnis says. “We now have a simplified management platform, on-demand scalability, and better visibility of our data center environment. Most importantly, we have the flexibility we need to support all of the city’s operations, 24x7.”

In addition to providing hyperconverged server and storage resources, the platform aligns seamlessly with Pearland’s virtualization platform. And the city’s formerly disparate traffic, business, and water/wastewater networks are now fully integrated.

“Everything is unified,” McGhinnis says. “One network. One data center platform. No more silos.”

The integration and simplicity of the infrastructure have greatly improved the city’s IT operations. And Pearland is planning to deploy Cisco Intersight™ and Cisco Workload Optimization Manager in the near future for additional visibility, alignment, and fine-tuning of its infrastructure and applications.

“My staff raves about the platform,” McGhinnis notes. “Patches that used to take two weeks now take three hours to complete. And changes can be applied across the platform, which has improved operational efficiency and will be critical as we scale the environment.”





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**Daniel McGhinnis**  
CIO, City of Pearland

### Faster applications, more visible citizen services

All of Pearland’s applications are now running on the new platform, and McGhinnis says performance has improved across the board.

“Our GIS applications render aerial photography 50 percent faster on the new platform, and we’ve expanded our use of GIS as a result,” he says. “Having a visual representation of our data allows for quicker analyses and enhances our decision-making processes.”

In addition to accelerating existing applications, the infrastructure is enabling new ones. Pearland is in the process of installing citywide Wi-Fi, for example, with wireless access points in all of its main intersections. The W-Fi will initially be used by Pearland police officers and may eventually support other city operations.

“In the past, our police officers had to travel to the station whenever their personal or dashboard cameras ran out of storage space,” McGhinnis explains, noting the valuable time that could otherwise be spent protecting and serving the community. “With citywide Wi-Fi, they can upload video at intersections and stay on the street. It’s a more efficient approach and allows us to provide a better public safety presence.”

Pearland is also deploying an IoT-based Advanced Metering Infrastructure (AMI) for water monitoring. The new system will increase operational efficiency, provide daily consumption information, and, most importantly, improve the customer experience.

“We want to be more dynamic, more proactive, and more personalized with our services,” McGhinnis says. “AMI will give us better, more timely data that we can share with our customers, and we’ll be able to see and fix problems before calls start coming in.”

Once the citywide Wi-Fi and AMI projects are complete, McGhinnis says Pearland will use its HyperFlex infrastructure to support 3D aerial rendering solutions, water modeling, and water flow applications.

“We can use 3D aerial rendering on structures and buildings to provide pre-hurricane preparation and post-hurricane damage assessments,” he says. “And it will certainly help us showcase Pearland’s incredible outdoor areas and parks.”

## Robust, multi-layered security

Pearland was hit with ransomware twice in McGhinnis' first two months on the job, and security was an obvious priority for the city's data center transformation. Pearland's new infrastructure is being protected by a host of advanced solutions, including Cisco Umbrella, Cisco Stealthwatch, Cisco AMP, Cisco Cloudlock, and Cisco ASA.

"All of the security products are fully integrated, so they work really well together," McGhinnis says. "Visibility is the key ingredient. If something manages to penetrate our environment, we can see it traverse the security solutions and eliminate the threat."

Several cities in Texas have been attacked with viruses and ransomware in recent months, he adds, but Pearland has remained unscathed.

"We don't take security lightly," McGhinnis says. "Since we made the transition to Cisco technologies, we've had zero incidents."

Explore more Cisco Data Center Compute customer success stories at [cs.co/dccstories](https://cs.co/dccstories).

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