Cisco Kinetic for Cities Parking Solution

Technology makes space for city drivers

An estimated 30 percent of cars in congested downtown traffic are typically searching for parking spaces, according to Donald Shoup, Distinguished Professor of Urban Planning at UCLA's Luskin School of Public Affairs.[1] Parking in urban areas is a constant struggle, wasting driver time and patience and releasing tons of extra carbon dioxide into the city environment. In addition, cities often lose revenue through inadequate meter enforcement and violations of no-parking, no-standing, and loading zones. Parking availability also affects the income of local shops and businesses.

This is why Cisco teamed up with partners to create the Cisco® Kinetic for Cities Parking solution. It provides intelligent parking services through technology, such as Kinetic for Cities platform services, Internet of Things (IoT) field area networks, video cameras, parking analytics, and sensor-enabled parking management. The solution also provides citizens with real-time information about available parking and allows them to book spaces in advance using mobile applications. The result is less traffic congestion and a more effective partnership between cities, citizens, local businesses, and parking enforcement agencies.

[1] "Free Parking or Free Markets," Access magazine, Spring 2011.

Benefits

- Cities generate additional revenue through demand-based parking pricing and more accurate ticketing of parking violations.
- Parking agencies gain insight into parking space use, so they can optimize the use of parking slots throughout the city.
- Motorists spend less time circling in search of parking by using real-time parking information through mobile applications, lowering stress and reducing fuel costs.
- Enforcement officers see improved success rates in parking-ticket disputes.

Cisco and partners

Cisco offers the Kinetic for Cities Parking solution together with multiple partners, including Worldsensing, Nexpa, Civicsmart, Smart Parking, ParkAssist, and Cleverciti. The components include:

Cisco

- End-to-end network
- IoT gateways, along with a required Low-power WAN (LoRaWAN) modem
- Data center infrastructure
- Cisco Kinetic for Cities software
- Operator dashboard
- Enforcement officers' mobile application
- Citizens' mobile application

Sensor partner

- Parking sensors
- Parking management application platform
- Parking analytics
- Operator web applications
- Driver guidance and enforcement agent app-related APIs
- On-street electronic panels

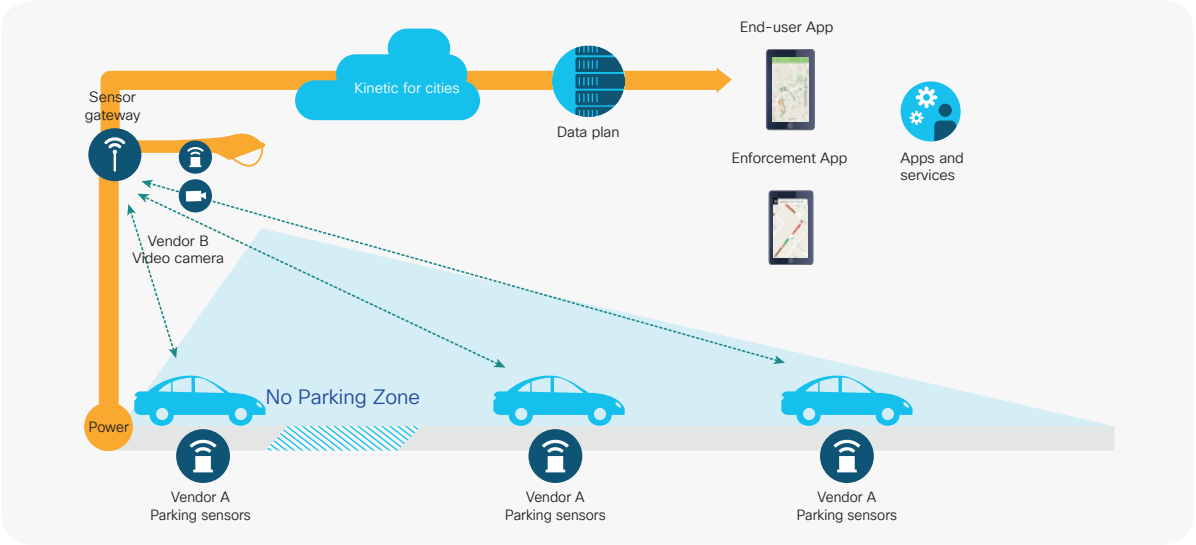
How the solution works

The solution works by:

- Combining sensors, smartphone apps, and the Cisco Kinetic for Cities platform to provide parking availability to citizens in real time.
- Integrating with enforcement applications and pushing violation notices to parking officers.
- Providing greater visibility into parking analytics, such as usage and vacancy periods, so cities can make better-informed decisions and long-term plans.

Figure 1 illustrates a practical example of how the solution can help resolve parking issues. Cisco partner applications capture parking events at the street level through various sources, including ground-embedded parking sensors, video coverage, and analytics. Cisco IoT gateways send the parking data to back-end platforms using the backhaul network, where it is processed. The data is then sent to the Cisco Kinetic for Cities platform, which sends updates to the electronic display panels in parking lots and to applications used by citizens and enforcement officers. Any other system interested in the events can access them through APIs on the digital platform.

Figure 1. Cisco Kinetic for cities parking solution in action



Next steps

For more details, visit:

- Website: cs.co/cities
- Blogs: blogs.cisco.com/government
- Digital transformation map: cisco.com/go/digitalmap
- Digital city white paper: cs.co/digitalcity
- Follow the conversation: @CiscoGovt

Questions? Contact scc-global@cisco.com.

Designed for a variety of use cases

The Cisco Kinetic for Cities Parking solution helps improve:

Parking guidance

- Integration with real-time parking availability, providing visualization on mobile phones or digital signs
- Ability to search for parking spaces based on point of interest and preferences
- Parking rates and policy information
- Payment using smartphones

Parking enforcement

- Detection and reporting of payment and overstay violations, using sensors and meter integration
- Detection and reporting of no-parking-zone and loading-zone violations using video analytics
- Creation of optimum routes for enforcement officers to maximize effectiveness
- Ability to issue tickets to citizens and save the evidence

Parking administration

- Ability to view maps of parking occupancy, notifications, policies, and health of sensors and advanced nodes
- Configuration and management of sensors, advanced nodes, and groups of sensors
- Policy management for all parking slots
- Event and action management for utilization and violations
- Monitoring tools to provide information on health of nodes, sensors, and gateways for a specific period of time

Parking analytics

- Parking occupancy, revenue, and enforcement reports
- Parking space usage by time of day or day of week to assist pricing decisions

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