



The votes are in: Eliminating lines at polling places with secure voter verification

Challenge

Streamline voter check-in

A major US city relied for years on paper registration rolls at more than 1,000 polling places across the municipality. Voters would sometimes stand in line for as long as two hours because each voter's registration had to be confirmed by looking it up in these massive books of bound paper. In such a large city, a small polling place could still be servicing hundreds or even thousands of voters — many of whom would be trying to squeeze voting into a lunch hour or a commute window. Lines could stretch around the block.

Not only was this paper-based approach inefficient, it potentially impacted the vote. In a busy world, many potential voters cannot devote that much time out of their days to standing in line. Voters can give up on the lines and some of them do not come back.

Election officials knew that networking tools connecting the polling places to voter registration databases could help solve the problem. Tablet computers could provide the interface for poll workers to access the voter registration online. That was the easy part of the problem to address.

However, the nature of how elections are managed and staffed created further issues. Polling places are set up in a wide variety of locations. Some might have connectivity, some might not. Reliability could pose a problem even in a connected location if network coverage is spotty. Elections are also staffed largely by volunteers who cannot be expected to possess technical troubleshooting expertise. Any solution had to be rock solid in reliability and highly integrated so that it was simple to use in the field and easily managed through a centralized interface.

Overview

City government is probably the most visible set of official institutions for most citizens. The city is where they work, live and perform their civic duties. In the hustle and bustle of big cities, small problems can become highly visible fast when they affect large numbers of people all at once.

Elections are high-profile events in any city, even more so in an era of concern over election integrity and civic cohesion. They present logistical issues in handling large numbers of people streaming into one location. While a lot of attention is paid to securing the actual votes cast at the polls, checking in voters and securely verifying their voter registration is a time-consuming part of the process as voters stand in line, which impacts the voter experience and potentially suppresses turnout.

As a major city-wide election was fast approaching, city staff were frustrated in getting support from one of its core network providers for any custom solution to these problems. Urgency for a solution was climbing. The smaller

civic election was viewed as a test for any new approach prior to the 2020 presidential election where the scale of turnout would be much larger. City staff needed help.

Solution

High-bandwidth, fully integrated portable Wi-Fi

City staff approached CenturyLink with their challenge and the template of a solution. They had brainstormed a design for a secure wireless pop-up network. Some of the pieces were available off the shelf. However, they did not have the integration expertise in-house or the bandwidth to produce enough working models in the time before the election. They needed consulting services to integrate the pieces into a solution (with all the testing and troubleshooting that entailed) and support it in the field.

CenturyLink engineers took on the fast-turn project. Created in concert with router-maker Cradlepoint, CenturyLink's all-in-one solution for voting locations provides protected, highly reliable Wi-Fi and networking at polling locations virtually anywhere, from heavily urban to sparsely populated rural locations. The system gives election boards the accuracy and security they need, along with seamless management that helps increase efficiency and the ability to share data — for example, on who has already voted — while reducing voter verification wait times at polling places.

The solution consists of a Cradlepoint cloud-managed, software-defined and FIPS-validated router that supports multiple WAN options. It connects to the tablets in poll workers' hands via secure Wi-Fi. It then connects to voter databases via secure LTE through up to two SIM cards for the wireless networks available to the city. This created a dedicated, secure network connection to the data center. Cradlepoint's NetCloud service enables centralized management and control through a single interface. The solution can be set up in minutes with no special or advanced training. The total solution was configured in a ruggedized, locked suitcase with redundant power supplies to create resilience and a layer of physical security.

Results and future plans: No lines!

The project was a collaboration with city election staff who gave feedback at several points in the process to ensure ease of setup in the field. After the all-in-one networks were deployed, lines were virtually eliminated across the metropolis for the 2019 city elections — versus a two-hour wait for some voters in previous elections. Voter check-in was reduced to less than one minute in most cases.

From early voting to the rush of election day, the solution worked so smoothly voters actually complimented election staff on how well it worked — a reaction that was

unthinkable in previous elections where lines stretched around the block.

With the 2020 elections looming, the 2019 city election was deemed a successful pilot of the new voter verification process. The CenturyLink solution helped solve a big challenge for the city by digitally transforming the way it worked and is now rolling out to election boards across the nation.