Using Chrome Devices in a Public Environment

GPLS Tech Bootcamp 2017
Unicoi State Park Lodge
Helen, Georgia

Presented by:

Charles D. Ellis, PhD.
Libdata.com

April 26, 2017

What is ChromeOS?

- Cloud based computer operating system.
  - Runs a Chrome browser as the interface to the web.
  - Runs Google/Android APPS

- Not just a Chrome browser
  - A login screen
  - A desktop
  - Taskbar and APP menu
  - Window management (multiple windows)
  - System tray – clock, battery indicator, Wi-Fi, current user icon, volume
  - Files APP for viewing images, open documents, watch videos, extract zip files…..
  - Offline APPS – Kindle reader, camera, calculator, google docs, gmail reader, Google calendar, play videos.
  - Minimal file storage
  - External USB, HDMI, Ethernet (Chromeboxes and Bases).

What ChromeOS cannot do

▶ Printing – uses Google cloud printers – you cannot connect a printer directly or use a network printer.

▶ Offline programs are limited

▶ Limited local storage (will accept thumb drives)

▶ Cannot attach printers, CD burners, or watch video DVDs (Netflix works)

▶ Cannot install and play PC games

▶ Cannot run Windows programs, like Photoshop, Microsoft Office, or other powerful desktop applications.

Advantages of ChromeOS Devices

- Fast bootup and shutdown
  - No background programs running or opening
  - No manufacturer installed "Bloatware"

- No more updating
  - ChromeOS is updated in the background and is always up to date.
  - No other programs to update – all the APPS are updated by the owner of the APP - not the user. (No more MSOffice updates!)

- No Virus protection or disk protection needed.

- Long battery life – uses much less power.

- Inexpensive – Chromebits ($85), Chromebooks ($200 - $500), Chromebases ($250 - $500), Chromebox ($100 - $300).

Problems with Windows Computers

- Viruses – especially ransomware
  - Requires extensive virus protection – has to be continuously updated and tends to slow down the computer.
  - Manufacturer "bloatware" – seems there are always items running in the background and added when you install or update software (i.e. JAVA updates).
  - Ransomware can go through the network and attack other computers. (Look at what happened to St. Louis recently)

- Updating Windows and other programs
  - Have to leave the computer on overnight to download Windows updates at least once a week.
  - Have to spend time updating other programs manually – especially print drivers , MSOffice, Deep Freeze, etc.
  - Have to maintain a server or individually setup group policies to protect the local system and control the user's experience.

- Disk protection
  - A disk protection program such as Faronics Deep Freeze is required to remove the previous user's information and to make sure viruses and other adware is removed perodically.

- Cost
  - Even though PC costs are coming down – you still have to buy virus and disk protection software and the added cost of IT support to do all of the required maintenance.

How Does ChromeOS Fix These Issues?

- ► **Public Session**
  - ► Automatically removes all of the previous user's information – No need for Disk Protection software.
  - ► No need for the staff to log into the computer – automatically goes to the desktop (or time management login screen).

- ► **No updating**
  - ► ChromeOS is updated in the background and is always up to date.
  - ► No other programs to update – all the APPS are updated by the owner of the APP - not the user.

- ► **No Virus protection needed.**

- ► **Printing**
  - ► No print drivers needed – prints directly to a cloud ready printer or a printer that is connected to a PC or server running cloud print software.

- ► **Desktop, look and feel, and available APPs are defined from a cloud admin console – no need for servers or individually setting up policies.**

Installing Chrome Devices in a Public Environment

- First Step – Decide which Chrome device to purchase
  - ChromeBase – All in one ~ $250 & up for a 22" monitor
  - Chromebox – Mini desktop – requires a HDMI monitor, keyboard and mouse. Is wireless, but has an ethernet connection. ~ $149 and up
  - Chromebook – Laptop – only wireless for the most part – many different sizes and prices, Start at ~ $200 & up for a decent size screen.
  - Chromebit – small computer (about the size of a snickers bar) – requires a small USB hub for keyboard and mouse or wireless keyboard and mouse (Bluetooth). Attaches to the HDMI port on a monitor. ~ $90.

Installing Chrome Devices in a Public Environment

- Second Step – Purchase Google admin console license for each ChromeDevice
  - Buy from Google resellers – Neverware.com, www.genesis-technologies.com, many others
  - License cost is ~ $30 for educational license (good for as long as you own the device)
  - Will have to have a domain and an email for an admin user.
  - Wait about a week for the licenses to become active
  - Test and make sure you can reach the admin console at admin.google.com – you will need to login with your admin login and password.
- Third Step - Setup your organizational unit and add your chrome devices.
  - The chrome devices will need to be enrolled first – usually they will be "wiped" and enrolled in your domain using the login and password in your license letter.
  - Once they are enrolled you can move them to a sub organization (i.e. Montgomery/Main/Adults)
- Forth Step – Setup the computers within the Admin Console
  - For public use – you will want to go into the admin console and change to the public session.
  - You will now have to learn how to use the Admin Console to manage the computers.
  - You will need to add APPs and Printers in the Admin Console.

Google Chrome Management Console

Chrome Management Settings

Setting up Public Session in Device Settings Section

Google Chrome Management Console

Adding Apps

Adding Printers

But, My Patrons Need MSOffice Products

- >95% of patrons just need a browser, but for the other few %, they may need MSWord, Excel, or Power Point.
  - Option one – Keep a couple of Windows computers available, i.e. don't go all Chrome.
  - Option two – Use Microsoft OneDrive – free Word, Excel, and Powerpoint.
  - Option three – migrate the patron to Google docs (free)
- Many of my patrons are older and set in their ways – they don't want to learn another operating system.
  - ChromeOS uses a chrome browser as the interface, very familiar interface. The libraries that have been using ChromeOS for the past couple of years say the patron's really like the Chrome devices – mainly because they are simple to use and very fast.
- My IT people say they are used to and trained/certified in Microsoft Windows and don't want to learn to maintain a new system.
  - Support is greatly simplified and works through a cloud server, giving them easy access from anywhere.
  - They no longer have to worry about viruses and disk protection.
  - Chrome has completely taken over the education system and has recently overtaken MAC for number of computers sold. It is the future of computing (cloud computing).

Time / Print / Reservation Management

► Time / Print / Reservation management is available and has been in operation, at many libraries, for the past two years.
  ► Works along side Windows and MacOS computers
  ► Works with the ChromeOS public session and Google Admin Console.
  ► Sets up and utilizes Google cloud printers for print management and wireless printing.
  ► Cloud based central management of multiple libraries.
  ► Web based print release station manager
  ► Web based central management – can have multiple management stations as well as portable (tablet) stations.

Public Chrome Computer Login Screen
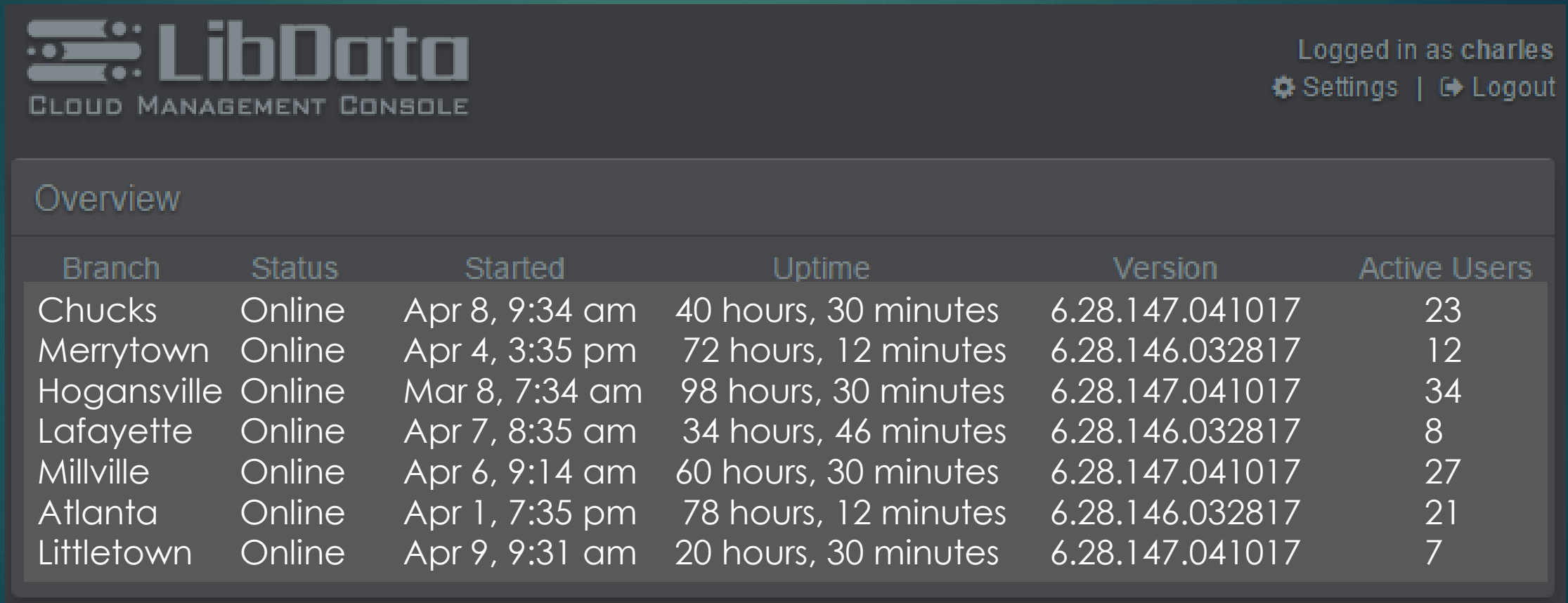
Reservation / Waiting List Manager

Time / Print / Reservation Management

► Cloud Based Branch Management
   ► Allows you to monitor your branches

LibData
CLOUD MANAGEMENT CONSOLE

Logged in as charles
⚙ Settings | ⊷ Logout

Overview

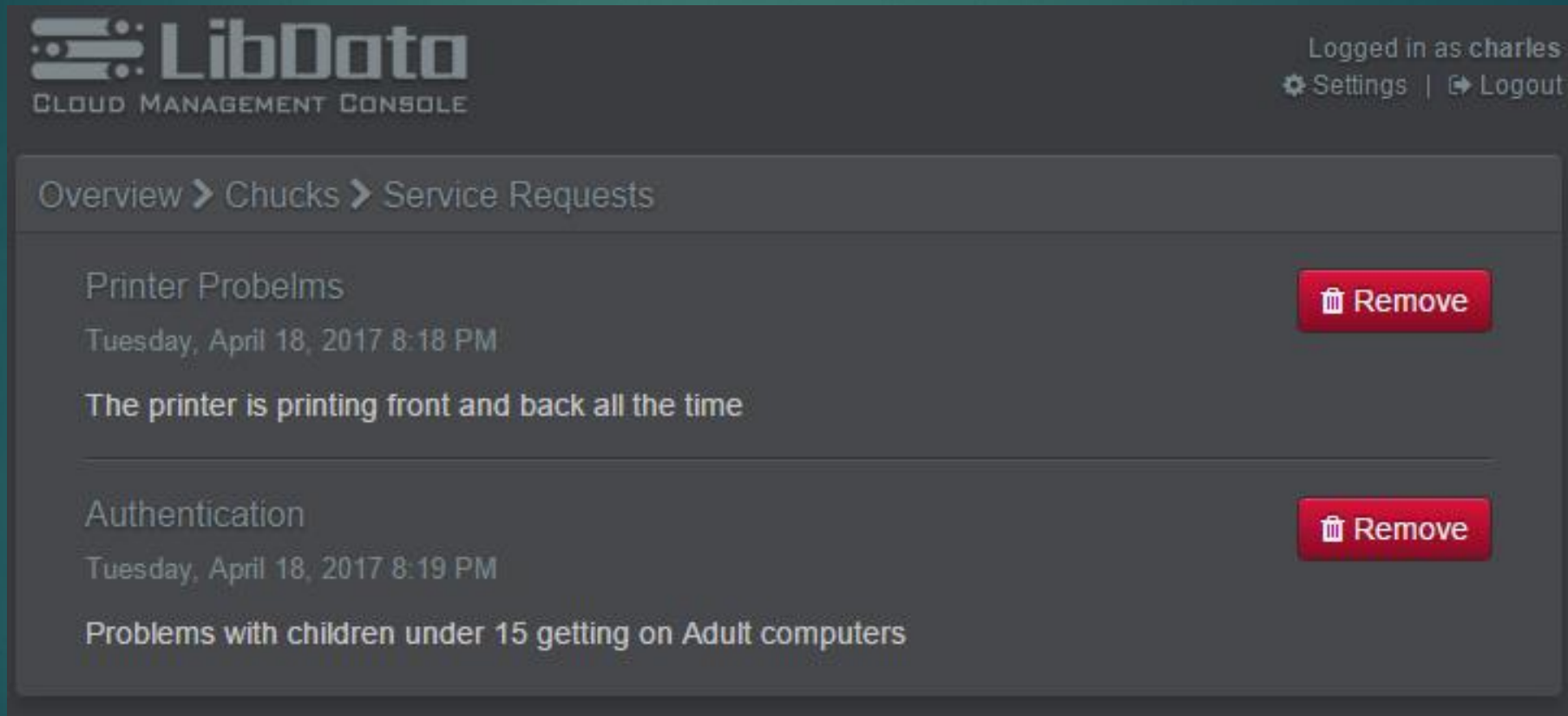| Branch	Status	Started	Uptime	Version	Active Users
Chucks	Online	Apr 8, 9:34 am	40 hours, 30 minutes	6.28.147.041017	23
Merrytown	Online	Apr 4, 3:35 pm	72 hours, 12 minutes	6.28.146.032817	12
Hogansville	Online	Mar 8, 7:34 am	98 hours, 30 minutes	6.28.147.041017	34
Lafayette	Online	Apr 7, 8:35 am	34 hours, 46 minutes	6.28.146.032817	8
Millville	Online	Apr 6, 9:14 am	60 hours, 30 minutes	6.28.147.041017	27
Atlanta	Online	Apr 1, 7:35 pm	78 hours, 12 minutes	6.28.146.032817	21
Littletown	Online	Apr 9, 9:31 am	20 hours, 30 minutes	6.28.147.041017	7

Time / Print / Reservation Management

► Cloud Based Branch Management
 ► Allows you to monitor your branches

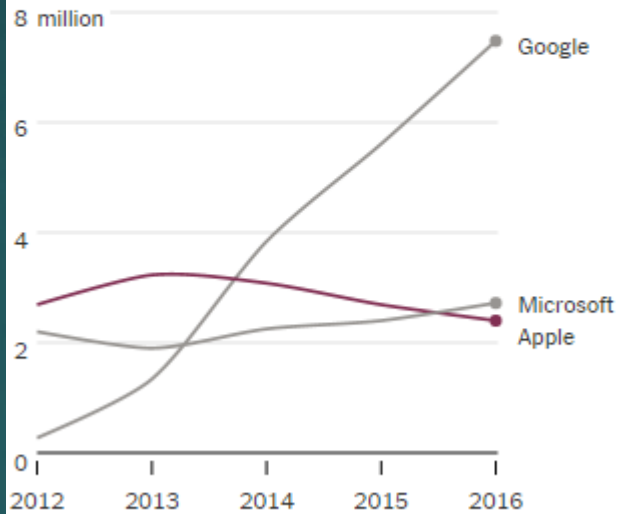# Time / Print / Reservation Management

► Cloud Based Branch Management
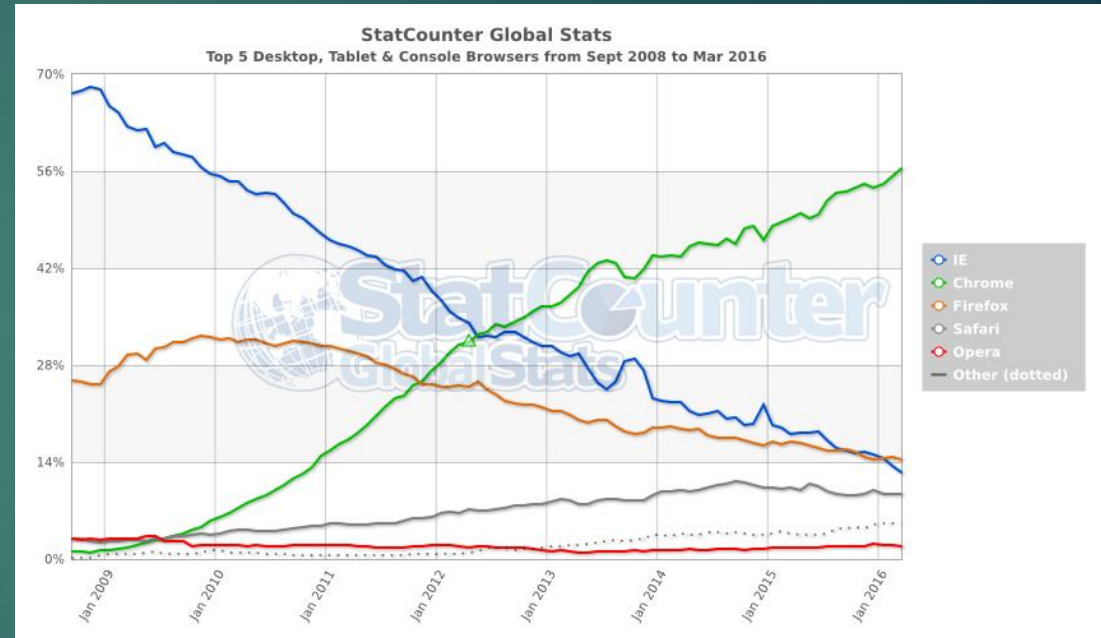 ► Allows you to monitor your branches

Are Chrome Devices Gaining Acceptance??
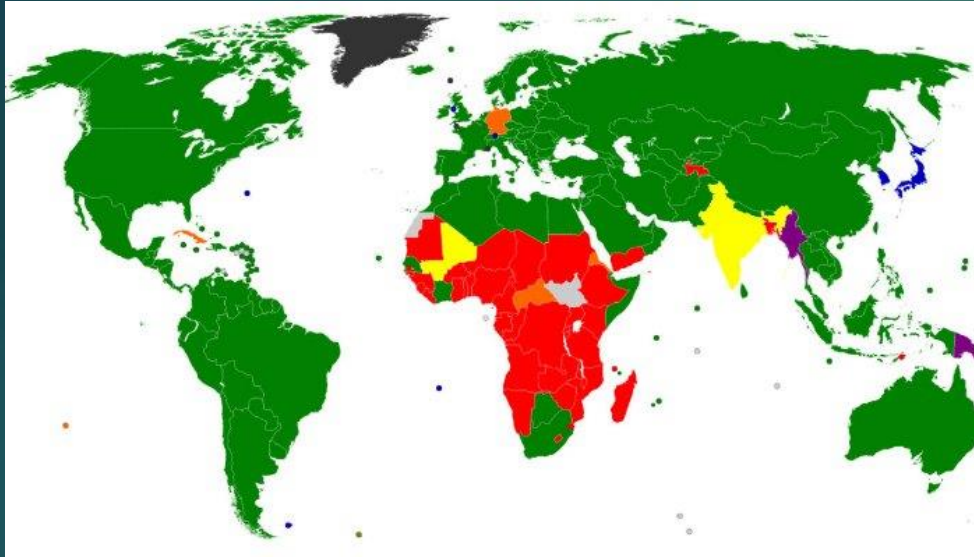

Devices Shipped to Schools

The number of laptops, tablets and other mobile devices shipped to schools in the United States, by company-specific operating system.

Source: Futuresource Consulting

StatCounter Global Stats
Top 5 Desktop, Tablet & Console Browsers from Sept 2008 to Mar 2016

Are Chrome Devices Gaining Acceptance??

Over the next several years one report is estimating that we will see over 17 million Chromebooks out in the wild by 2023 (via Global Market Insights).
The same source estimated that we would see 5.3 million Chromebooks sold by 2014, so a jump to 17 million nearly 10 years later is likely a fairly conservative estimate. Looking at the market during 2016 we've already seen Chromebook sales overtake Apple's Macbooks for the first time, shipping over 2 million units while Apple shipped a little over 1.7 million.

Browser Used around the world (Green = Chrome)

Where are Chrome Devices being used in Libraries?

► Chrome Devices in Public Libraries
  ► Libraries have purchased a few Chrome devices and loan them out for a short period.
  ► Some added them to their public area without time/print management
  ► Some have completely replaced their Windows computers with Chrome Devices (i.e. Rome, GA – Milledgeville, GA) and have time/print management.
    ► Most who have Time/Print management also have a few windows machines.

► Libraries who are presently using Chrome with Time/Print management.
  ► 40 -50 Libraries in Ga
  ► South Carolina
  ► Missouri
  ► Arkansas
  ► Texas
  ► Kentucky
  ► Wyoming
  ► West Virginia
  ► Brampton, Ontario Canada (10 branches)
  ► Chatham, Ontario Canada (5 branches)
  ► Christ Church, New Zealand
  ► Queensland, Australia
► Expressed interest
  ► Denver, CO
  ► New York City
  ► Sun City Retirement Communities
  ► Surry County, UK
  ► Albany, NY
  ► Mississippi

Summary

- ► Significantly reduces cost and IT support requirements.
- ► Patrons like the experience – fast and easy to use.
- ► Cloud managed
- ► ChromeOS computers have been used successfully, in public libraries, for 2 years.
- ► Time/print management available and mature.
- ► Gaining wide acceptance.