



IBM Consumer Device Services (CDS)

e-access

From the ATM to the Web, customers continue to express their desire for the "better, faster, cheaper" alternatives that self-service has to offer. Far from being a novelty sought after by the sophisticated consumer, self-service is now a mainstream imperative. Airlines, retailers, financial institutions, government agencies and others are quickly adopting cost saving e-access solutions.

One of the challenges in a self-service environment is supporting numerous devices. In the fast paced world of e-business and wireless, these devices are changing all the time. To meet these challenges, IBM e-access has developed a middle-ware product, Consumer Device Services (CDS), specifically designed for self-service solutions. This product provides high-level Application Programming Interfaces (APIs) which are continually being added to, as customers request new device support. CDS removes the requirement for application programmers to write device drivers.

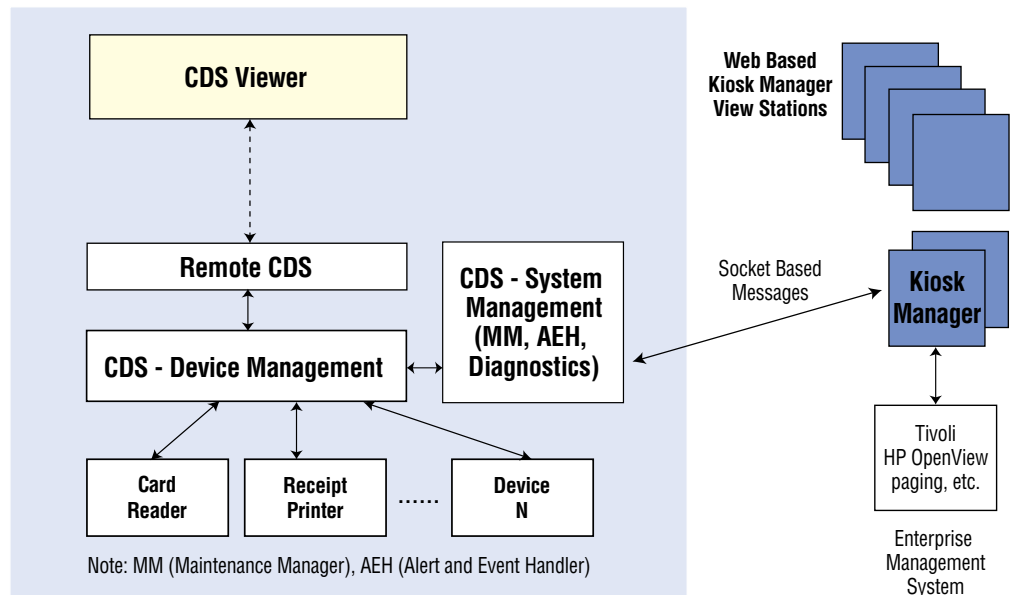
In an environment where usage is 24/7, high availability is paramount. CDS also provides diagnostics, error handling and system management functions. In fact, constant availability is so important, that CDS diagnostics allow a device to be serviced while the main application continues to run on the remaining devices.

High-level API Interface provides flexibility

CDS is an insulating layer (layer of abstraction) between the application program and the actual devices. This minimizes, if not eliminates, changes required to the application programs should new devices be added. This is accomplished through the use of a graphical configuration tool which allows support staff to quickly select or alter supported devices. Another benefit of the configuration tool is for application testing. For example, in a desktop environment, CDS would be configured to use a mouse as the pointing device. For the kiosk, the pointing device would be configured

to be the touch screen. The application tester could test on a standard desktop with no programming changes required when the application was moved to the kiosk.

CDS is an extendable, multi-threaded application. Currently, it is available for the Windows NT/2000/XP and Linux operating systems. CDS supports numerous devices including touch screens, card readers, receipt printers, ticket printers, barcode scanners, speakers, cash dispensers, passport readers and biometric devices. Applications that use Consumer Device Services APIs can be written in Java and C/C++. CDS supports 32-bit applications for high performance and provides an asynchronous interface to allow multitasking. This is important in a self-service application where a customer may need to touch the screen at the same time as another device such as a printer is printing.



CDS Support Functions for high availability

CDS has a number of support programs that aid in monitoring, servicing and replenishing self-service devices. These programs include Diagnostics, Alert and Event Handler (AEH) and Maintenance Manager (MM).



Diagnostics is used for servicing and replenishment (e.g. card jams and ticket or paper stock). It is a graphical, easy to use program, that can be run directly from the touch screen of a kiosk. It can even include instructional diagrams to aid in servicing and problem determination for non technical staff.

AEH and Maintenance Manager together track and diagnose system problems. MM gathers event statistics on all devices to help highlight potential problem areas before they impact operations. Alerts can be unsolicited and generated automatically.

Critical error handling routines are part of the system software allowing for automatic recovery from many problems, thus reducing overall support costs.

Summary

CDS consists of the following major programs and libraries.

- CDS Java (classes and libraries) - used by Java programs to communicate with CDS APIs.
- CDS API (library) - used by C/C++ applications and by CDS Java to control devices.
- CDS device management (main program) - device drivers for all supported devices.
- CDS Diagnostics (program) - used by support staff to test and replenish all the devices on the kiosk.
- CDS Alert and Event Handler (program) - used for system management.
- CDS Maintenance Manager (program) - monitors health of devices, provides integrated system management.
- CDS configurator (program) - used to configure the CDS environment and devices.
- Common Use Self Service (CUSS) compliant platform - International Air Transport Association (IATA) standard platform for self-service airline applications.

- Wireless device support - supports personal digital assistant (PDA).

CDS is part of a suite of Self-Service software from IBM

IBM e-access has developed a self-service software suite. In addition to CDS, this suite includes NetCDS, Kiosk Manager and Kiosk Transaction Server. CDS is at the heart of the IBM self-service software suite. It drives everything even though you can't see it.

NetCDS - Tools to control a browser based client environment.

Kiosk Manager - Web based tool for realtime system management.

Kiosk Transaction Server - Manages transaction requests and replies between the client and the host.

Total e-access Solutions from IBM

IBM Global Services can be your single source for self-service solutions. We provide custom enclosures, integration of third-party peripherals, installation, training and support. IBM expertise includes rollout, host integration, remote systems management, consulting and financing.

For more information on IBM e-access solutions, please visit www.ibm.com/kiosk or send an email to: [cgs@ca.ibm.com](mailto:cds@ca.ibm.com)

Air Canada

Canada's biggest airline knows that today's travellers aren't locked into any one airline, and bad travel experiences can quickly lead them to other carriers. Air Canada serves more than 30 million passengers a year and is widely recognized for its stellar customer service. While it was pleased with its growing passenger base, the airline was concerned that its customer service systems might not be able to keep up. So, Air Canada looked to innovative e-business technology -- in the form of self-service kiosks -- to revamp the airline's business processes.

After reviewing solutions from 10 different vendors, Air Canada chose IBM e-access because of its proven knowledge in implementing self-service solutions and its ability to offer a complete solution -- from hardware to software and services. Air Canada now has 148 kiosks across 8 airports in Canada where passengers can check in, change their seat and perform various other functions. IBM Consumer Device Services is at the heart of this solution. Results have been impressive. Up to 50% of Air Canada's passengers are using the kiosk during peak periods, enjoying an 80% reduction in check-in time.



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