

Jan. 30, 2007

WiFi software specialist Devicescape has broadened its business model, launching a service around a patented networking technique claimed to eliminate the complexities of end-user WiFi logins. The service is free to the public, but earns the company commissions from operators and royalties from device makers.

Devicescape unveiled its new strategic direction in a presentation by CEO Dave Fraser at a Jan. 30 DEMO event for venture capitalists in Palm Desert, Calif. Our sister site, *LinuxDevices.com*, learned of the strategic shift in an exclusive interview with VP of Marketing Glenn Flinchbaugh.

### **Mushrooming WiFi-enabled devices**

Devicescape expects shipments of browserless, WiFi-enabled devices to "mushroom" in the years ahead. Flinchbaugh explains, "WiFi is literally a couple bucks to embed. Three hundred cities in the U.S. have either launched or are in the process of building municipal networks, and there's going to be more. And, there'll be things like WiMAX to do in-fill along freeways. The bigger vision is to enable all these new and emerging devices to get connected to home, company, and public networks."

"For example, a billion mobile phones ship each year, and more and more of them will be dual-mode phones with WiFi," he adds.

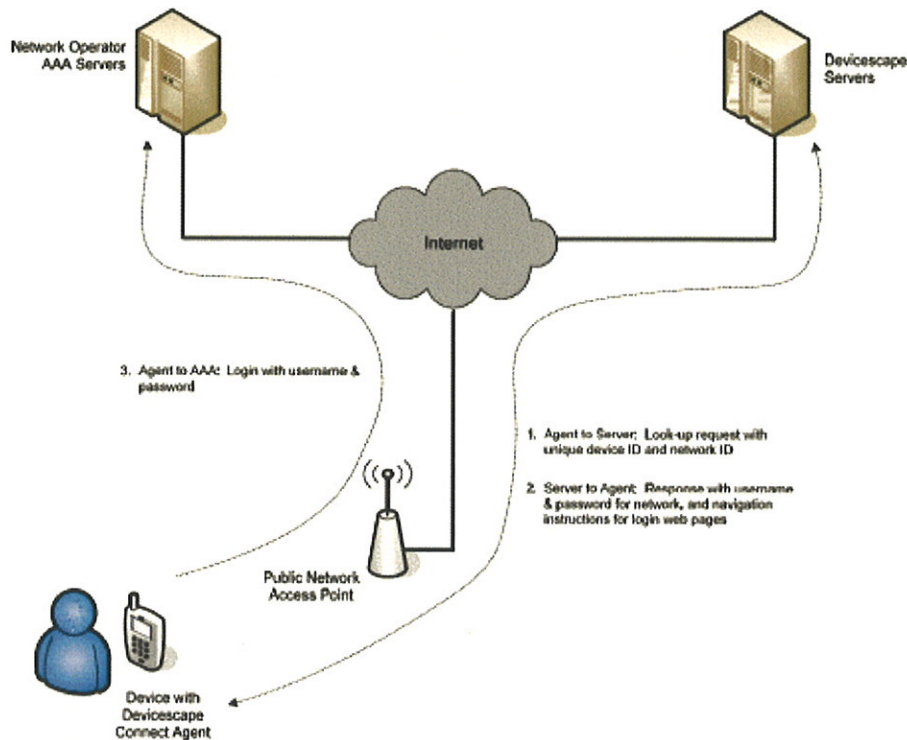
According to Avi Greengart, principal analyst with Current Analysis, "Consumers increasingly adopt converged phones, media players, portable gaming devices, GPS navigation systems, Internet tablets, and laptops. There is typically no way to seamlessly sign on to and switch among networks. This is frustrating for the consumer, and inhibits growth for device manufacturers and network operators."

Flinchbaugh says the Devicescape service will improve WiFi device usability, particularly for devices such as VoIP phones, cameras, media players, and handheld gaming gadgets that lack browsers.

### **"Secret sauce"**

According to Flinchbaugh, the "secret sauce" behind the Devicescape Service is a patented technique that will enable high-security, centralized Devicescape servers to supply usernames, passwords, and other login information

transparently, on behalf of users, whenever they carry Devicescape-enabled equipment within range of networks that they are entitled to use. Service subscribers simply type their hotspot usernames and passwords into Devicescape's website once, after which their Devicescape-enabled devices supply the needed credentials automatically.



**Devicescape-enabled equipment retrieves user login credentials, then logs in using the network operator's standard AAA (Authentication, Authorization, and Accounting) system**  
(Click to enlarge)

The service could, for example, enable Internet phones to make and receive calls without the user logging in, enabling the devices to act more like cell phones, Flinchbaugh said. Additional user benefits are many, he added, citing enhanced device security, user service discovery, usage record storage, and more.

Flinchbaugh explained, "If you walk past a hotspot, we receive a ping. We have a way of talking to our server before the device logs in. We've patented that. We're not disclosing it yet, but it uses standard networking available in any hotspot, so the hotspot doesn't have to change any configuration, or change any hardware."

Flinchbaugh added that hotspot operators will not be able to block the technique without crippling Internet access for all users. Asked if the technique is based on DNS (domain name services) requests or UDP packets of some kind, Flinchbaugh replied, "You're on the right track, but you'd have to sign an NDA to learn more."

A key component of the Devicescape service is a software utility called the Devicescape "Connect Agent," which runs inside the user's device. The agent [began beta testing](#) last December, and [reached general availability](#) a couple of days ago.

The Connect Agent is supplied as portable source code, with typical binary footprints ranging between 35KB and 50KB -- making it a candidate for delivery in a firmware revision. Required components -- also available from Devicescape if needed -- include:

- ANSI C library, plus a few common string manipulation functions
- Pseudo-random number generator
- Wi-Fi supplicant providing an API to read SSIDs and BSSIDs
- HMAC-SHA1 and AES crypto (already built into most WiFi chips/stacks, Flinchbaugh said)
- TLS/SSL
- HTTP client
- Universally unique identifier (UUID) generator

### **Revenue model**

The Connection Agent is currently available under a no-cost license for Windows Mobile devices, Windows XP SP2 laptops, Nokia's Linux-based 770 Internet tablet, and Linksys's Linux-based WIP300 VoIP phone. Additionally, Devicescape will license it to devicemakers under flexible terms with royalty-bearing and upfront royalty buy-out options, according to Flinchbaugh.

In addition to licensing the Connect Agent to device makers, Devicescape hopes to earn commissions from network operators through various revenue-sharing arrangements. Flinchbaugh explains, "Hotspot operators have standard programs for resellers. We'll be bundling free trial subscriptions with our software downloads, and if we bring an operator a new customer, or a service upgrade, we'll earn a commission."

Additionally, Devicescape could make money by selling aggregate usage data to network operators and device makers, helping them better understand how their products are actually used. Another revenue-generating angle is to share user data with service providers on an opt-in basis. Additionally, since the service correlates device type with network usage, it could be used to help network operators create service plans at different rates for different types of devices, Flinchbaugh suggests.

### **Availability**

The Connect Agent is currently available for free download on [Devicescape's website](#), to users of Windows Mobile devices, Windows XP SP2 laptops, Nokia's

Linux-based 770 Internet tablet, and Linksys's Linux-based WIP300 VoIP phone, according to Devicescape.

The Connect Agent currently works with 30 commercial hotspot networks representing 50,000 points of presence, according to Flinchbaugh. Supported hotspot networks currently include AT&T, Atria, BT Openzone, Earthlink, Fatport, FON, Google, KPN, McCarran Airport, NTT, Opti-Fi, Orange, PT-WiFi, Softbank, Sonera HomeRun, Swisscom, Surf-and-Sip, T-Mobile, The Cloud, Union Square Wireless, Wayport (US McDonalds), WiFly, and ZRNET.

New services can often be added within days, if users submit the html source code of captive portal sites at network locations they wish to access, Flinchbaugh said.

Silicon Valley-based Devicescape employs about 60, most engineers, Flinchbaugh said. The company has long participated in WiFi standardization efforts at the [IEEE](#) and the [Wi-Fi Alliance](#). In addition to the Connect Agent, it also offers an [Easy Access Agent](#) based on the Alliance's just-finalized [WiFi Protected Setup](#) specification.

Lots more information about the Devicescape service is available in a whitepaper available from the company's website.