Enterprise-Grade Wi-Fi Connectivity
The dB Performance® KRAVE® Supplicant provides OEMs with a robust software solution for enabling Wi-Fi network connectivity across a broad range of mobile devices. The KRAVE® Supplicant runs in the application space of a device’s operating system, and handles the Wi-Fi provisioning, connection, authentication, encryption, fast-roaming, and load-balancing management.

With the KRAVE® Supplicant and industry-leading expertise from dB Performance®, you are assured of the smoothest integration, fastest time to market and best possible Wi-Fi connectivity experience. In fact, the KRAVE Supplicant is used as the golden reference supplicant for selected AP OEMs and test bed manufacturers.

Multiple Provisioning Options
The key to a frictionless user experience is a simple, intuitive, onboarding process to connect to the Wi-Fi network. The KRAVE® Supplicant supports the following methods:

- **WPS (Wi-Fi Protected Setup) v1 and v2**
  Connecting a device to a home wireless router is as easy as pushing a button or entering a PIN code.

- **Wi-Fi EasyConnect**
  Extends WPS with enhanced security, and introduces the easiest provisioning method yet - scanning the wireless router QR code with your smartphone.

- **Wi-Fi Direct**
  For secure, peer-to-peer walk-up connections between smartphones, and between smartphones and printers or other accessories.

- **Wi-Fi Passpoint**
  For an automated, secure connection at your favorite coffee shop and other public venues.

Comprehensive Security
The KRAVE® Supplicant supports the entire suite of Wi-Fi security mechanisms including WPA/WPA2/WPA3-Personal, WPA/WPA2/WPA3-Enterprise, Mesh Networking, WPS v1/v2, Wi-Fi EasyConnect, Wi-Fi Direct, Passpoint, FILS, Management Frame Protection, and CCXv4. A full range of 802.1X Extensible Authentication Protocol (EAP) methods are supported to enable deployment in any type of enterprise security environment. Integrators can add or remove features as desired for a fully tailored solution.

Standards-Based Fast Roaming and Load Balancing
With appropriate WLAN hardware support, the KRAVE® Supplicant supports IEEE 802.11k, 802.11r, and 802.11v for standards-based Wi-Fi fast roaming, band steering, and load balancing.

Mesh Networking Support
An important part of many home networks, mesh networking offers flexibility and redundancy for high-availability network access.

Wireless Bridge Support
The KRAVE Supplicant includes AP-side features that enable wireless bridge and wireless extender features.

Optional Cisco Compatible Extensions (CCX)
CCX provides carrier-grade fast roaming performance, expedited access, load balancing, location services, and network management for today’s large installed base of Cisco Access Points.

Device Design Flexibility
The KRAVE® Supplicant is written in thread-safe ANSI C, and a full source code license is available. This gives device developers complete flexibility in porting the KRAVE Supplicant to the device operating system, processor, and wireless chipset of their choice. A sample CLI and sample GUI are available on most platforms for rapid prototyping and development. In addition, dB Performance can provide Professional Services to deliver a turnkey solution.
# KRAVE® Supplicant Specifications

## Wireless Standards
- (with supported H/W)
  - IEEE 802.11a/b/g/n/ac/ax
  - IEEE 802.11k Radio Measurements
  - IEEE 802.11r Fast Roaming
  - IEEE 802.11s Mesh Networking
  - IEEE 802.11u Network Discovery
  - IEEE 802.11v Network Management
  - IEEE 802.11w MFP (Management Frame Protection)
  - IEEE 802.1X Authentication
  - WPA/WPA2/WPA3 Personal/Enterprise with SAE
  - WPS (Wi-Fi Protected Setup) v1 and v2
  - Wi-Fi EasyConnect with QR code provisioning
  - Wi-Fi Direct
  - Wi-Fi Passpoint
  - FILS (Fast Initial Link Setup)

## EAP Methods
- **EAP-TLS**
- **EAP-PEAPv0/v1 with:**
  - EAP-MSCHAPv2
  - EAP-TLS
  - EAP-GTC
  - EAP-OTP
  - EAP-MD5-Challenge
- **EAP-TTLS with:**
  - EAP-MD5-Challenge
  - EAP-GTC
  - EAP-OTP
  - EAP-MSCHAPv2
  - EAP-TLS
  - MSCHAPv2
  - MSCHAP
  - PAP
  - CHAP
  - EAP-LEAP
  - EAP-FAST
  - EAP-PSK
  - EAP-PAX
  - EAP-SAKE
  - EAP-IKEv2
  - EAP-GPSK
  - EAP-PWD
  - EAP-EKE
  - EAP-WSC
  - EAP-SIM (with SIM card H/W)
  - EAP-AKA (with USIM card H/W)
  - EAP-AKA’ (with USIM card H/W)

## Development Features
- Extensive debug support
- EAP/RSN testing tool (Linux)
- Power management
- Socket-based control interface
- WEXT and nl80211 driver interfaces
- soft-MAC and full-MAC architectures

## Optional User Interfaces
- Sample Qt4 GUI for Linux
- Sample JAVA patch for Android
- Sample CLI

## Available Operating Systems
- Linux 2.6+
- Android 4.1+
- Others available upon request

## Memory Footprint
- 150 KB ROM for base supplicant configuration
- Add approximately 200 KB ROM for tunneled EAP modes
- Add 80 KB ROM for WPS or EasyConnect
- Add 150 KB ROM for Wi-Fi Direct
- Add 100 KB ROM for Fast Roaming
- Add 50 KB ROM for Load Balancing
- 100 KB RAM during operation

## Documentation
- Release Notes
- Developer Guide
- API Reference Manual

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