



Remotely manage mobile devices in the field with Red Bend's vDirect Mobile—standards-based software that works with any Open Mobile Alliance (OMA) device management server. As the leading independent DM client, vDirect Mobile enables manufacturers and operators to break the dependency of closed DM systems.

vDirect Mobile is a full-functioned device management client that provides provisioning, configuration, device information retrieval and security to meet expanding requirements for mobile software management by mobile operators and device manufacturers. It is proven across multiple platforms, operating systems and memory types on feature phones, smartphones, WiMAX devices and machine-to-machine (M2M) modules.

vDirect Mobile makes it easier and more cost effective for manufacturers to quickly integrate standards-based device management functionality into mobile devices, enabling faster time to market. Integration is easier and faster because vDirect Mobile:

- Includes a built-in porting layer to the Windows and Linux operating systems with customizable support for any mobile platform including Android and Brew® MP,
- Incorporates two OMA management objects—Software Component Management Object (SCOMO) and Firmware Update Management Object (FUMO)—directly into the client software, providing the flexibility to perform individual software updates or full firmware improvements, and
- Provides business logic rules that can be easily adapted to meet specific operator requirements, further reducing time to market for new mobile devices.

Features include:

- Provision and activate new subscribers
- Deploy firmware updates over the air (FOTA)
- Configure parameters including preferred roaming lists
- Recover DM session in the event of power loss (fail-safe)
- Retrieve device data such as diagnostics, billing & inventory
- Conduct lock & wipe and device reset
- Customize the DM user interface and experience

The vDirect Mobile architecture consists of three conceptual layers which together provide the full DM client. The upper layer supports use cases needed for the entire lifecycle of the mobile device/wireless module such as: provisioning, configuration, diagnostics and device information retrieval.



- **Provisioning**
 - Bootstrap support: OTA, Factory and SIM
 - Bootstrap profiles: CP and DM
 - Remote/self-activation
 - Preferred roaming list (for CDMA)
- **Configuration**
 - GPRS, WAP, MMS, PIM, EMAIL, WiMAX, Wi-Fi and others
- **Diagnostics**
 - Device diagnostic
 - Device events monitoring
- **Device Information Retrieval**
 - Device and network health signs
 - Configuration parameters
 - Billing and inventory data
 - Data synchronization

Red Bend's server-independent vDirect Mobile DM client offers many benefits such as:

Standards: vDirect Mobile implements both the OMA DM 1.1.2 and the OMA DM 1.2 specifications, including the OMA DLOTA 1.0 as well as FUMO 1.0 and SCOMO 1.0 enablers. As a leader in the OMA DM workgroup, Red Bend is committed to supporting standards as they evolve. Support for enabler specifications such as Scheduling 1.0, DiagMon 1.0, LAWMO 1.0

and DMSmartCard 1.0 will be added as the specifications are ratified.

Experience: Tens of millions of successful DM sessions worldwide have been performed based on Red Bend’s vDirect Mobile. Red Bend’s experience ensures fast and trusted integration of DM into your device without delaying time to market.

Independence: Red Bend breaks the dependency of closed DM systems that may lock in operators and manufacturers to a single source. vDirect Mobile is interoperable with any OMA DM-compliant server, enabling customers to select the best products and not compromise by choosing DM and client from the same vendor.

Interoperability: vDirect Mobile has been extensively interoperability tested with numerous DM server vendors under the OMA Testfest program.

Compact Code: The static footprint of vDirect Mobile is highly optimized to fit within the constrained memory environment of mobile devices and requires a minimum of runtime resources.

Portability: vDirect Mobile is written in ANSI C for easy portability. The abstraction of all platform dependencies into a well structured porting layer makes it easy for device manufacturers to port vDirect Mobile to their proprietary platforms or commercial RTOSes.

Security: Security is built into software supplied with the SDK. vDirect Mobile authenticates the server it is interacting with to ensure that all data exchanges are secure. All communications with the server can use HTTPS / WTLS in order to ensure that sensitive information is not exposed.

Professional Services: Red Bend’s experienced professional services organization can help device manufacturers to integrate vDirect Mobile into their mobile platform and accelerate time to market for devices. Red Bend can also develop the DM client for the device manufacturer according to the operator’s specifications. Red Bend’s professional services engineers have extensive experience in

Benefits of vDirect Mobile

- Improve time to market (TTM)
- Independence from closed DM systems protect customer investment
- Reduce integration cost
- Suitable for applications where code size matters
- Reliable and trusted solution
- Easy integration, portability
- Ensure that sensitive information is not exposed

Features of vDirect Mobile

- Tested for interoperability with device management servers from nine vendors
- Compliant with industry standards and best practices: Open Mobile Alliance (OMA): OMA DM 1.2, OMA DM 1.1.2, OMA DL 1.0, FUMO 1.0, Open Mobile Terminal Platform (OMTP):DM enabler 1.0
- Available with Red Bend’s industry leading FOTA solution
- Small footprint
- Proven in tens of millions of deployed devices worldwide
- Written in ANSI C
- Security—All communications with the server can use HTTPS / WTLS

developing full DM clients on many different software platforms including proprietary operating systems.

SDK: Red Bend offers a fully documented SDK with an OMA DM compliant library and Win32 reference implementation. This allows handset manufacturers to quickly and easily integrate device management capabilities into products according to mobile operator specifications.

■ **About Red Bend Software**

Red Bend Software, the leader in Mobile Software Management (MSM), provides software solutions for managing firmware, applications and devices over the air. The company’s award-winning MSM products enable device manufacturers, mobile operators and software developers to increase revenues, reduce support costs and achieve faster time to market by remotely managing their software assets on mobile devices. Red Bend’s software has been deployed in more than 620 million mobile devices and adopted by eight of the top 10 handset manufacturers, including Kyocera, LG Electronics, Motorola, Sharp, Sony Ericsson and ZTE, as well as dozens of other leading companies in the mobile, M2M and WiMAX markets. Unlike device management vendors with proprietary end-to-end systems and manufacturers’ internally developed solutions that are platform specific, Red Bend is the only company offering independent client software that is interoperable with any standards-based server and that works with any platform on any type of mobile device. Founded in 1999, Red Bend is a privately held, venture capital-financed company with offices in China, Israel, Japan, Korea, the U.K. and the U.S. Visit www.redbend.com.