

# Wireless Infrastructure Platform 2.2 Migration Guide

The **Devicescape** Wireless Infrastructure Platform (WIP) version 2.2 includes significant enhancements and API changes from previous versions of the platform. Customers with previous versions of the platform who want to migrate their development projects to WIP 2.2 should read this document to determine if WIP 2.2 enhancements impact their implementations.

## What's New in WIP 2.2?

- Enhanced, consistent AP management through Web UI, CLI, and SNMP. Complete configuration of the AP can be accomplished through any of these interfaces.
- Substantial performance improvement of Web UI based on added support for transactions
- Modular packaging, extensible Web UI framework, and text-based CLI schemas enable post-Sales feature upgrades of AP. These improvements also simplify AP customization during development phase.
- Flexible, more robust configuration upgrades. Configurations are retained on firmware upgrades.
- Persistent event logs for enhanced in-field troubleshooting even after reboot
- Support for Untagged VLANs, Management VLANs, and easier configuration of Virtual Wireless Networks

**Enhanced, consistent AP management through Web UI, CLI, and SNMP. Complete configuration of the AP can be accomplished through any of these interfaces.**

- More intuitive command line interface (CLI) based on an updated data model allows Administrators to more easily perform complex configurations like setting up virtual wireless networks (VWNs), configuring security, or setting up a wireless distribution system (WDS). Configurations that used to require executing several commands are reduced to one or two commands.
- SNMP enhancements like support for transactional "writes" (SNMP set) and proprietary configuration MIBs enables AP configuration via SNMP

---

**Note**

Support for SNMP "set" commands is offered only in some proprietary Devicescape MIBs in to match functionality offered in the CLI and Web UI. Not all MIB write-able objects are supported. For details, see "Supported MIBs" in the SNMP topic in the *Administrator Guide*.

---

**Substantial performance improvement of Web UI based on added support for transactions**

**Modular packaging, extensible Web UI framework, and text-based CLI schemas enable post-Sales feature upgrades of AP. These improvements also simplify AP customization during development phase.**

- Finer-grained packaging has been implemented to make it easier to add or remove functionality on AP at build time, and add custom plugins with Web UI pages as extensions.

In terms of packages provided with the platform, this means several new packages have been added

to encapsulate Web UI tabs either separately or along with the relevant features. Web UIs for clustering, local authentication server, network time protocol (NTP), and SNMP have been broken out from the base Web UI application package for modularity. (You can add or remove them easily.)

In terms of custom packages, this means it is easier to add a Web UI tab for a plugin as a modular "extension" (without having to modify the base Web package).

- New, simplified text-based CLI schema format makes it easier to add CLI classes and properties for your customized plugins and extensions

### **Flexible, more robust configuration upgrades. Configurations are retained on firmware upgrades.**

- Administrators can upgrade a new version of the firmware or a single package on a deployed network (one or more APs)
- Existing configurations are automatically migrated to the upgraded firmware. (No need to save backup configurations in preparation for an upgrade. Downgrades still require backups.) For more information on this, see "Preparing a Firmware Upgrade or Downgrade" in the *Developer Guide* and "Upgrading the Firmware" in the *Administrator Guide*.

### **Persistent event logs for enhanced in-field troubleshooting even after reboot**

APs running with **Devicescape** Wireless Infrastructure Platform 2.2 firmware will persist event logs across reboots. Administrators will be better able to troubleshoot network problems that persist even after APs are reboot.

### **Support for Untagged VLANs, Management VLANs, and easier configuration of Virtual Wireless Networks**

- Added support for Untagged Virtual Local Area Networks (VLANs)
- Added support for Management VLANs
- Added support for easier configuration of VLANs through the CLI

## **How Do WIP 2.2 Enhancements Impact Ongoing Projects?**

If you have implemented and deployed firmware with previous versions of the platform that you do not plan to migrate to WIP 2.2 for further development, do nothing. Your deployed firmware can continue to run on as WIP 2.x based firmware.

If you have implemented firmware with previous versions of the platform and want to continue these development projects with WIP 2.2, you may need to make some changes to your current code base. This will depend on the type of customizations and features you have already implemented. Not all modules or aspects of the platform will be affected.

## Map of Enhancements to Migration Requirements

| Enhancement and Components  | Development/Implementation Impact   |
|---|---|
| <p>clicmds package Schema (clicmds-schema)</p>  | <p>If you modified commands in the CLI schemas (added, removed, or modified classes and properties) you need to apply your changes to the new text-based schema</p> <p>Most of the CLI schema moved into device-mgmt-agent-ap package. (Extract the source for that package and see the file <code>ap.cli</code>.)</p>  |
| <p>Device Management Agent transactions (dman-transactions)</p>   | <p>Some functions have gone away and been replaced by others.</p> <p>If you have written your own DMAN plugin that uses some of these legacy functions, you need to modify it to use the new functions. (For example, changes get replaced by <code>changes_contains</code>.)</p> <p>For more information, see the DMAN API documentation at: <a href="http://www.devicescape.com/docs/wip/apis/dman/index.html">http://www.devicescape.com/docs/wip/apis/dman/index.html</a></p>   |
| <p>liblsql package removed.</p>   | <p>The liblsql package has been removed.</p> <p>Use liblsqlquery instead. For more information, see the liblsqlquery API documentation at: <a href="http://www.devicescape.com/docs/wip/apis/liblsqlquery/index.html">http://www.devicescape.com/docs/wip/apis/liblsqlquery/index.html</a>.</p>   |
| <p>LSQL implementations transactions</p>  | <p>If you are using LSQL, we suggest you start using transactions for better performance and stability. (Use of transactions will help avoid some bad transient states like changing to WPA Personal without having set the key yet, for example.)</p>  |
| <p>Enhanced Web UI framework (web-ui-framework, web-ui-ap-admin, web-ui-ap-admin-help, and clustering packages)</p> | <p>If you rebranded, modified, or extended the Web UI, you will need to re-work "feature" implementations at a minimum.</p> <ul style="list-style-type: none"> <li>• Feature specifications are defined in a new location (they used to be in <code>admin-features.hdf</code>, and are now part of <code>admin-config.hdf</code>) and the schema for features has changed.</li> <li>• Many changes have been made to the web-ui-ap-admin package files and new extension packages have been added.</li> </ul> <p>For full details, see the Web UI topic in the <i>Developer Guide</i> at: <a href="http://www.devicescape.com/docs/wip/developer_guide/web_ui.php">http://www.devicescape.com/docs/wip/developer_guide/web_ui.php</a></p> |

| Enhancement and Components   | Development/Implementation Impact  |
|--|--|
| <p>Modular, "finer-grained" packaging (affects multiple packages)</p>                        | <p>If your pre-WIP 2.2 implementation uses any of these packages, you need to update your RFS image creation process (scripts) to include new versions of these packages:</p> <ul style="list-style-type: none"> <li>• clustering (or clustering2, which is now a legacy package)</li> <li>• clicmds</li> <li>• device-mgmt-agent-ap</li> <li>• web-ui-ap-admin</li> <li>• web-ui-ap-admin-help (The source package is web-ui-ap-admin.)</li> </ul> <p>You may need to install more packages to get all the features. The following new extension packages are now provided:</p> <ul style="list-style-type: none"> <li>• device-mgmt-agent-lsqli-http</li> <li>• device-mgmt-agent-ntp</li> <li>• device-mgmt-agent-ssh</li> <li>• device-mgmt-agent-web-server</li> <li>• web-ui-clustering</li> <li>• web-ui-las</li> <li>• web-ui-ntp (The source package is web-ui-ap-admin-ext.)</li> <li>• web-ui-snmp</li> </ul> <p>For more information, see "Quick View of Packages" in the <i>Package Guide</i> at: <a href="http://www.devicescape.com/docs/wip/package_guide/overview.php">http://www.devicescape.com/docs/wip/package_guide/overview.php</a> and the AP Package list for the Reference AP in the <i>Developer Guide</i> at: <a href="http://www.devicescape.com/docs/wip/developer_guide/rfs.php#ref-ap-list">http://www.devicescape.com/docs/wip/developer_guide/rfs.php#ref-ap-list</a>.</p> |
| <p>on-the-box HTTP LSQ interfaces</p> <p>LSQL over TCP</p>                                   | <p>These features have been removed.</p> <p>The platform uses on-the box liblsqquery instead.</p> <p>If you used the legacy interfaces, re-write your source code to use liblsqquery</p>   |
| <p>Off-the-box HTTP LSQ interfaces (for example, Devicescape Wireless Operations Center)</p> | <p>Now requires installation of device-mgmt-agent-lsqli-http on the APs.</p> <p>If you use Devicescape WOC, install this new package on your APs.</p>  |
| <p>Configuration Migration</p>   | <p>To leverage this new feature, customers must follow rules outlined in Developer Guide when they make changes to classes and properties from one release to the next/</p> <p>If you plan to release firmware upgrades to AP administrators, follow the instructions in the <i>Developer Guide</i> on "Preparing a Firmware Upgrade or Downgrade" at: <a href="http://www.devicescape.com/docs/wip/developer_guide/device_mgmt_agent.php#upgrade">http://www.devicescape.com/docs/wip/developer_guide/device_mgmt_agent.php#upgrade</a></p>   |

| Enhancement and Components                  | Development/Implementation Impact   |
|---|---|
| Data Model                                  | <p>If you have components that uses LSQL to change low-level classes (<b>bridge-port, vlan</b>) (for example, a custom Web UI), then you need to change your code to use the new, high-level classes:</p> <ul style="list-style-type: none"> <li>• access-point</li> <li>• vwn</li> </ul> <p>Also, on previous versions of the platform some tasks required that you enable/disable object instances using (for example) <b>ssid</b>. With the addition of new classes and transaction support, these tasks have gotten simpler and no longer require enabling/disabling object instances. These should also be changed in your implementation to use the high-level classes.</p> <p>For more information, see the <i>Administrator Guide</i> topics:</p> <ul style="list-style-type: none"> <li>• CLI Classes and Properties Reference at:<br/><a href="http://www.devicescape.com/docs/wip/cliclassref/index.html">http://www.devicescape.com/docs/wip/cliclassref/index.html</a></li> <li>• CLI usage documentation at:<br/><a href="http://www.devicescape.com/docs/wip/admin_guide/App_CLI.php">http://www.devicescape.com/docs/wip/admin_guide/App_CLI.php</a></li> </ul> |
| Devicescape Studio                          | Removed in a previous release.  |
| Kickstart (kickstartd and related packages) | Removed.  |