



OpenScape WL 4 / OpenScape WL4 Plus

Migration Guide

A31003-M2000-S102-03-7620

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Contents

1 Parameter Migration and Device Management.....	4
2 WiFi.....	5
2.1 802.11ac.....	5
2.2 802.11n.....	5
2.3 Transmission Power.....	5
2.4 WEP.....	5
2.5 A-MPDU Packet Aggregation.....	6
2.6 EAP-FAST.....	6
2.7 Advanced Authentication Options.....	6
2.8 802.11w.....	6
2.9 Roaming and Scanning.....	7
2.10 Number of Enabled Channels and 802.11k.....	7
2.11 Fast Roaming Methods.....	7
2.12 CCX.....	8
2.13 Power Save Mode.....	8
2.14 TSPEC Behavior.....	8
2.15 Aruba 800 Controller Compatibility.....	8
2.16 Default Gateway.....	9
3 Telephony.....	10
3.1 Voice Codecs.....	10
3.2 H.323.....	10
4 Location Services.....	11
5 Battery Saving Options.....	12
6 Logging and Troubleshooting.....	13
7 Software Download.....	14
8 Related Documents.....	15

1 Parameter Migration and Device Management

To make the upgrade from OpenStage WL3 to OpenScape WLAN Phone WL4 easier, OpenScape WLAN Phone WL4 supports parameter migration allowing to create user parameter templates from all variants of OpenStage WL3 and OpenScape WLAN Phone WL4 handsets.

NOTICE: Parameter migration requires the use of the compatible Device Manager. Please also read the Release Notes before applying any changes in order to get up-to-date information about the product release.

In most cases, it is possible to replace an OpenStage WL3 handset with an OpenScape WLAN Phone WL4 of the same variant by creating such a template and applying it to the new handset. This document aims to describe all deviations from this rule.

A few parameters are not suitable to migrate directly from OpenStage WL3. When non-default values are set for these parameters in OpenStage WL3, it might be necessary to evaluate how to adapt these changes to OpenScape WLAN Phone WL4. This includes: **Network** → **General** → **Auto switch network timeout**.

2 WiFi

The WiFi chipset used in OpenScape WLAN Phone WL4 is different from the one used in OpenStage WL3.

Differences can be visible when a walk-through of the site is done with a connected phone call between the two handsets. Reading the RSSI values at the same spot may show differences and the handover location may be different for the two handsets.

Typically there are four things that should be evaluated using the tools in the handset:

- Coverage area co-channel interference
- Roaming candidates
- Roaming performance (where and when roaming occurs)
- Voice quality in walk and talk test

This can be done by measurement only and by listening to real calls.

Some older WiFi features that are supported by OpenStage WL3 are no longer supported by OpenScape WLAN Phone WL4. The following paragraphs describe the most important differences between the WiFi implementations.

2.1 802.11ac

OpenScape WLAN Phone WL4 supports 802.11ac and uses it whenever supported by the infrastructure. OpenStage WL3 does not support 802.11ac but does not have any problems coexisting with 802.11ac devices. It is therefore recommended to enable 802.11ac for SSID used by OpenScape WLAN Phone WL4 for both pure OpenScape WLAN Phone WL4 installations and mixed OpenStage WL3/OpenScape WLAN Phone WL4 installations.

2.2 802.11n

In OpenStage WL3 it was possible to disable support for 802.11n by setting the parameter **Network** → **Network X** (A-D) → **802.11 Protocol** to either **802.11b/g** or **802.11a**. In OpenScape WLAN Phone WL4 this parameter has been removed and it is instead possible to select which frequency band should be used (2.4 or 5 GHz). The handset uses 802.11ac or 802.11n if available in the infrastructure.

2.3 Transmission Power

It is not possible to set a fixed transmission power in OpenScape WLAN Phone WL4. Transmission power is controlled by the infrastructure using 802.11d and 802.11h.

2.4 WEP

WEP is perceived deprecated due to security weaknesses and is therefore not recommended to be used in any installation. WEP encryption has been

replaced by WPA, WPA2, and WPA3 where the latter is preferred due to its stronger encryption, authentication, and key management strategies for wireless data and system security.

NOTICE: WPA is now deprecated and not allowed to be used in any new products as a stand-alone encryption. For older devices that do not support WPA2, it is recommended to use WPA Mixed Mode (WPA + WPA2). This mode allows newer devices to use stronger WPA2 AES-based CCMP encryption, while still allowing older devices to connect with older WPA TKIP secure protocol.

2.5 A-MPDU Packet Aggregation

During interoperability testing there have been seen issues with the Aruba and Stellar controllers when the A-MPDU aggregation was enabled in the handset. Therefore, it is recommended to set **Network** → **Network X (A-D)** → **A-MPDU Packet Aggregation** parameter to **Off** when connecting to Aruba or Stellar Wi-Fi and **On** when connecting to other networks.

2.6 EAP-FAST

NOTICE: The EAP-FAST method is not supported in OpenScape WLAN Phone WL4.

To deploy OpenScape WLAN Phone WL4 to an existing OpenStage WL3 installation, at least one of the security methods supported by OpenScape WLAN Phone WL4 must be configured. That is, for installations where only EAP-FAST is enabled, a new method needs to be configured on the existing SSID, or a new separate SSID for OpenScape WLAN Phone WL4 needs to be created.

2.7 Advanced Authentication Options

The **Advanced** option for WiFi authentication is no longer available in OpenScape WLAN Phone WL4. Any supported authentication methods should be possible to be configured without the **Advanced** option, which was needlessly adding complexity to the configuration process.

2.8 802.11w

Protected management frames (802.11w) are supported and enabled whenever supported by the infrastructure.

Since OpenStage WL3 does not support but can coexist with 802.11w clients, it is possible to enable optional 802.11w support in mixed OpenStage WL3/OpenScape WLAN Phone WL4 installations.

2.9 Roaming and Scanning

In OpenStage WL3, the **Roaming methodology** parameter can be set to **System aided roaming** for infrastructures such as Extricom, which aim to control the roaming process. In OpenScape WLAN Phone WL4, this parameter has been removed since the normal roaming method can be used for all types of infrastructures.

2.10 Number of Enabled Channels and 802.11k

When many channels are enabled and have to be scanned before each roam, there is always a risk that the audio quality is affected. This is especially true if many DFS channels are enabled. The longer the handset is scanning each channel, the greater the likelihood that an AP is found, but this also affects sound quality negatively.

A new parameter, **Use 802.11k neighbor list**, is available on the handset. When it is enabled, the handset uses the 802.11k neighbor lists received from the AP to choose which channels to scan during the roaming process. It allows AP deployments where more channels are used without decreasing the voice quality when in call. The handset roaming performance of course is highly dependent on receiving correct neighbor information from the infrastructure. If this partial scan fails to find a roaming candidate, and the measured signal strength of the AP continues to drop, the handset will fall back to scanning channels selected in **Network** → **Network X (A-D)** → **2.4 GHz channels or 5 GHz channels**.

2.11 Fast Roaming Methods

NOTICE: The preferred fast roaming method in OpenScape WLAN Phone WL4 is 802.11r Fast Transition. If selected, Temporal Key Integrity Protocol (TKIP) will be disabled as encryption method.

Opportunistic key caching (OKC), also known as Proactive key caching, is still supported and used when 802.11r is disabled either in the system or the handset.

PMKSA-Caching is supported in OpenScape WLAN Phone WL4. When this option is selected, OKC is automatically disabled.

For existing OpenScape WLAN Phone WL3 installations where both OKC and PMKSA caching are used, it is recommended to use 802.11r Fast Transition from OpenScape WLAN Phone WL4 and create a single mobility domain for all the controllers.

In case 802.11r is not supported by the infrastructure, the best alternative is to enable PMKSA caching in the OpenScape WLAN Phone WL4 handsets if roaming between controllers is more frequent than roaming within a controller. If intra controller roaming is the most common case, OKC should be configured.

CCKM is not supported in OpenScape WLAN Phone WL4. To deploy the OpenScape WLAN Phone WL4 to an existing OpenScape WLAN Phone WL3 installation where CCKM is used, at least one of the key management methods

supported by OpenScape WLAN Phone WL4 must be enabled as well. This can be done either on the existing SSID or on a new separate SSID for OpenScape WLAN Phone WL4.

2.12 CCX

Cisco Compatible Extension (CCX) is not supported in OpenScape WLAN Phone WL4. This means that for example, TSPEC setup, TX power, and channel limitations might work differently in OpenScape WLAN Phone WL4 than in OpenStage WL3 when connected to Cisco WiFi infrastructure.

2.13 Power Save Mode

The option to disable U-APSD power save mode and use active mode during calls has been removed from OpenScape WLAN Phone WL4. U-APSD mode is expected to work well with all currently available infrastructures, and disabling it would only result in deteriorating call time performance.

2.14 TSPEC Behavior

TSPEC configuration mismatches are handled differently in OpenScape WLAN Phone WL3 and OpenScape WLAN Phone WL4. In case of OpenScape WLAN Phone WL4, make sure that the handset parameter **TSPEC Call Admission Control** matches the system configuration.

If the system (AP) side is configured to mandatory TSPEC on AC Voice but TSPEC is set to **Off** in the handset, an OpenScape WLAN Phone WL3 will adapt and send the voice traffic in AC Best effort. Consequently, the configuration mismatch can go undetected and result in degraded voice quality since the voice traffic is sent over the air with lower priority.

In the same scenario, an OpenScape WLAN Phone WL4 refrains from connecting to any call until the configuration mismatch is corrected either by disabling TSPEC on the system side or setting the handset parameter to **Automatic** or **Required**. In this case, information about the detected problem can be found in the Admin menu of the handset in **Device info** → **WLAN info**.

An OpenScape WLAN Phone WL4 with a software version earlier than v2.2.8 does not support TSPEC for AC Video, which is used for SIP signalling. To resolve this issue, either upgrade the handset software or disable TSPEC for video in the system.

2.15 Aruba 800 Controller Compatibility

OpenStage WL3 contained a small adjustment for a problem with traffic prioritization in an old Aruba controller. This is no longer available in OpenScape WLAN Phone WL4.

2.16 Default Gateway

The OpenScape WLAN Phone WL4 handsets require a default gateway to be configured, either statically or using DHCP. The main reason for this is that the default gateway is used to check for network connectivity issues. Since it is possible to deploy the OpenScape WLAN Phone WL3 without a default gateway, it is important to ensure that this condition is met when introducing the OpenScape WLAN Phone WL4 to an existing OpenScape WLAN Phone WL3 deployment.

3 Telephony

3.1 Voice Codecs

OpenScape WLAN Phone WL4 supports the OPUS wideband codec. In addition, all codecs supported by OpenStage WL3 are still supported.

Selecting OPUS as the preferred codec for OpenScape WLAN Phone WL4 in a mixed OpenStage WL3/OpenScape WLAN Phone WL4 environment is acceptable, as a common supported codec is selected for calls between OpenStage WL3 and OpenScape WLAN Phone WL4.

3.2 H.323

NOTICE: OpenScape WLAN Phone WL4 is a SIP device and it does not support H.323.

For existing OpenScape WLAN Phone WL3 H.323 deployments using Innovaphone PBXes, both H.323 and SIP are supported by the PBX and it is possible to use SIP for OpenScape WLAN Phone WL4 and H.323 for OpenScape WLAN Phone WL3.

4 Location Services

The handset is compatible with Cisco Mobility Service Engine (MSE) and AiRISTA Flow Real Time Location System (RTLs) which give a more accurate location than AP Location. For the details if these location services are supported on particular handset variants, please refer to the handset's Data Sheet.

When migrating or introducing OpenScape WLAN Phone WL4 to an existing environment with OpenScape WLAN Phone WL3 installations, no additional measures shall be taken to configure AiRISTA Flow RTLs and Cisco MSE because the parameters remain unchanged. For additional information on Cisco MSE, please refer to Cisco product documentation.

NOTICE: To use AiRISTA Flow RTLs on OpenScape WLAN Phone WL4 handsets, install one of the following software versions:

- v3.0.0 or later
 - v2.2.14
-

5 Battery Saving Options

In OpenScape WLAN Phone WL4 the default battery saving setting is **Black also in call**, which is recommended for extending the battery life. By contrast, in OpenStage WL3 the default setting is **Information**.

If the screen saver is set to **Black also in call**, no information is shown on the screen both when the handset is not in use and during the ongoing call.

6 Logging and Troubleshooting

The PC side application PDL is no longer required for retrieving logs from OpenScape WLAN Phone WL4. If logs must be collected and sent to R&D, an appropriate log level can be enabled either in the handset admin menu or through Device Management.

The handset can be configured to send logs to either an SFTP server or make them available to be retrieved by connecting the handset to a Windows PC as a USB drive using a DP1 desktop programmer. These files are encrypted and can only be decrypted by R&D.

As in OpenStage WL3, it is possible to configure the handset to send some clear text logs to a remote syslog server.

The web server that was available in OpenStage WL3 has been removed from OpenScape WLAN Phone WL4. The syslog, SFTP, and USB drive features provide similar functionality.

In contrast with OpenStage WL3, logging in to the handset via telnet is not possible in OpenScape WLAN Phone WL4 to improve the security of the device.

7 Software Download

The software image for OpenScape WLAN Phone WL4 is larger than the one for OpenStage WL3. It means that it takes longer to upload the image to device management and download to the handset.

Software upgrade using TFTP is no longer supported.

8 Related Documents

Data Sheet, OpenScape WLAN Phone WL4

Configuration Manual, OpenScape WLAN Phone WL4

Configuration Manual, Unite Connectivity Manager

Installation and Operation Manual, Portable Device Manager for Windows (WinPDM)