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## Introduction

This document provides sample configurations for Converged Access deployment in a small-branch single switch network. These configurations can be used across hundreds or even thousands of branches to deploy the wireless network at the branch locations with tried and tested configurations.

## Prerequisites

### Requirements

There are no specific requirements for this document.

### Components Used

The information in this document is based on these software and hardware versions:

- Catalyst 3850 Series Switch
- Cisco IOS Version 03.03.00SE or later
- Cisco IES Version 1.2 or later

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

## Background Information

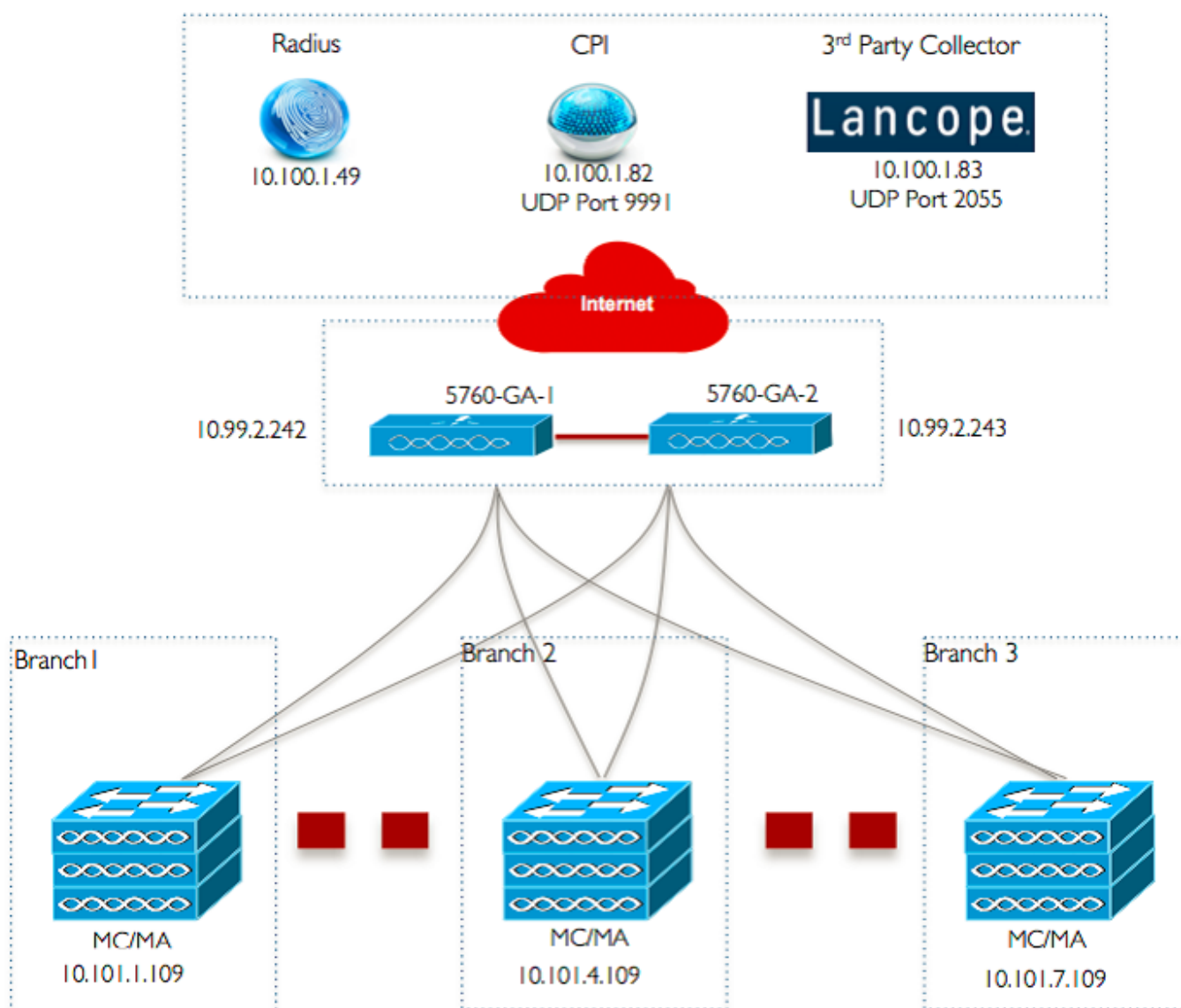
The small-size remote branch office or retail store can consist of a single or a stack of ethernet switches to provide network connectivity to the wired and wireless users. Such small networks can converge the ethernet switching with next-generation wireless capability on the same catalyst switch.

For such network designs, the switch can integrate Wireless LAN Controller (WLC) mobility controller and mobility agent (MA) functions without requiring any additional Converged Access elements, such as Switch-Peer-Group (SPG) in the network. These networks can require guest wireless services, as well as common security and network access policy enforcement across all branch offices.

## Configure

### Network Diagram

This image illustrates a reference topology for a typical branch network.



### Configurations

## Base Layer 2/3 Configuration

- **VLAN Trunk Protocol (VTP) Mode: Transparent**

This example shows the configuration of VTP mode.

- **Spanning Tree: Rapid-Per VLAN Spanning tree (PVST)**

This example shows the Rapid-PVST configuration.

- **Create named VLANs**

This example shows how the VLANs are created.

- **Configure Default Gateway**

The Default Gateway configuration is shown in this example.

- **Configure Management Virtual Routing and Forwarding (VRF)**

The Management VRF configuration is shown in this example.

- **Configure IP DHCP Snooping**

In this example, DHCP snooping is configured for all wireless client VLANs.

**Note:** Uplink ports must be marked as trust as shown in the Uplink Ports/Port-Channel example.

- **Configure Address Resolution Protocol (ARP) Inspection**

In this example, ARP inspection is configured for all wireless client VLANs.

**Note:** Uplink ports must be marked as trust as shown in the Uplink Ports/Port-Channel example.

- **Uplink Ports/Port-Channel (allow necessary VLANs)**

In this example, Uplink Port/Port-Channel is configured.

## Mobility

- **Wireless Management Interface**

In this example, wireless functionality is enabled and the 5760 Guest Anchor WLC is configured as

the mobility peer.

**Note:** You can use a Cisco 5508 WLC or an 8510 AireOS as a guest anchor controller.

## Security

- **Global Parameters**

This example shows the configuration of Global Parameters.

## WLAN

- **802.1X WLAN**

The 802.1X WLAN configuration is shown in this example.

- **Pre-Shared Key WLAN**

The Pre-Shared Key WLAN configuration is shown in this example.

- **Open WLAN**

The Open WLAN configuration is shown in this example.

## Guest Solution

- **CWA Guest WLAN**

The CWA Guest WLAN configuration is shown in this example.

- **Mobility and Guest WLAN configuration on 5760 Guest Anchor 1**

In this example, Mobility and Guest WLAN is configured on 5760 Guest Anchor 1.

- **Redirect ACL for CWA (Central Web-Auth)**

The configuration to redirect ACL for CWA is shown in this example.

## Advanced IOS Wireless Services

- **Application Visibility and Control (AVC) Configuration**

This example shows the configuration of AVC.

- **WLAN Configuration**

This example shows the configuration of WLAN.

- **Egress Bandwidth Shaping for WLANs**

The example shows the configuration of Egress Bandwidth shaping for WLANs.

- **WLAN Configuration**

This example shows the configuration of WLAN.

## **Best Practices**

Best practices for wireless configuration include:

- Using the **wireless client fast-ssid-change** command to configure fast SSID changing.
- Using the **passwd encryption on** and **passwd key obfuscate** commands for password encryption.