SpeechLogix

XLogix Softphone Integration with MASCOM

Seamless Voice, Messaging, and Management Experience

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1. Executive Summary

The **XLogix Softphone Integration with MASCOM** delivers a streamlined and secure communication experience, enabling users to make and receive calls through a MASCOM-branded softphone application. Built for both mobile and desktop environments, the solution enhances MASCOM's unified communications offering by providing a flexible, reliable, and user-friendly interface that meets the needs of modern enterprises.

The platform ensures encrypted voice and video calling, real-time messaging, and seamless integration with MASCOM backend systems. Mobile users benefit from instant call alerts through integrated push notification services (APNS/FCM), even when the app is inactive.

This end-to-end solution is designed to meet the evolving needs of enterprise communications while maintaining consistency, security, and administrative control.

2. Solution Overview

The softphone solution is composed of the following key components, each contributing to a reliable and secure communication experience:

- **MASCOM-Branded Softphone Application:** A white-labeled softphone for desktop and mobile platforms, enabling users to make secure voice/video calls, send messages, and access contact directories with MASCOM's branding.

- **SIP Communication Layer:** A backend system that includes SIP proxying, RTP media processing, and secure signaling over TLS and DTLS-SRTP. The system interacts with Huawei SIP Servers to manage calls efficiently and securely.

- **Push Notification & Wake Services:** Integrated support for APNS (Apple) and FCM (Google) ensures mobile users receive incoming call notifications even when the app is in the background or inactive.

- **Web Server & API Layer:** Handles provisioning APIs, push notifications, and communication between the softphone client and backend systems.

- **Provisioning Portal (Admin Console):** A centralized management interface where MASCOM administrators can provision users, assign SIP credentials, and manage features with role-based access control.

- **Database Systems:** Includes a Business DB for user and SIP configurations and a Big Data DB for call logs, app state transitions, and analytics.

- **High Availability Infrastructure:** Load-balanced access via HAProxy ensures the system remains resilient and scalable under varying workloads.

3. System Architecture

The architecture of the XLogix Softphone integration with MASCOM is designed to ensure secure, scalable, and seamless communication between mobile/desktop users, backend services, and provisioning systems. The diagram below illustrates the interaction flow across different system components:
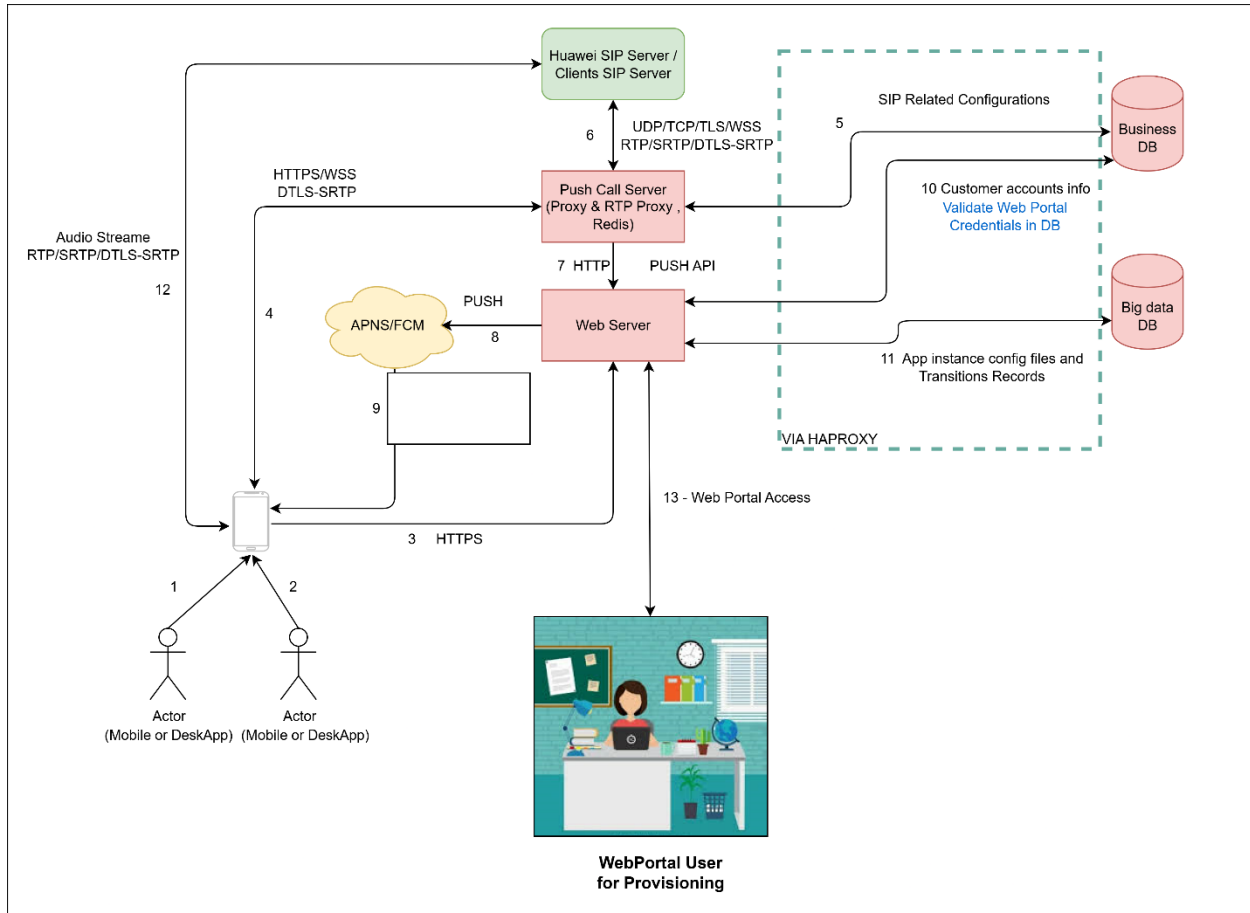
3.1. Communication Flow and Components

1. **End-User Softphone (Actor - Mobile/Desktop App):** MASCOM-branded softphone clients initiate SIP-based communication over secure HTTPS and WSS protocols. These apps support audio/video calls, messaging, and configuration retrieval.

2. **Web Portal Access (Admin Users):** Administrative users access the MASCOM Provisioning Portal to manage accounts, validate credentials, and configure system settings (Step 13).

3. **HTTPS Communication for Authentication and Configuration:** Softphone clients connect to the Web Server over HTTPS (Step 3), allowing secure login and retrieval of account-specific provisioning data.

4. **Push Notification via APNS/FCM:** For mobile clients, push notifications are sent using Apple Push Notification Service (APNS) or Firebase Cloud Messaging (FCM) to wake devices and deliver call events (Step 4 & 9).

5. **SIP Server Communication:** Upon initialization, the softphone interacts with the Huawei SIP Server (or SIP Proxy) using secure signaling protocols (UDP/TCP/TLS/WSS) and media protocols (RTP/SRTP/DTLS-SRTP) (Steps 5 and 12).

6. **Push Call Server (Proxy & RTP Proxy):** This intermediary handles real-time signaling and media routing. It sends push events to the Web Server (Step 6), interacts with the SIP server, and ensures low-latency audio stream management using Redis for temporary data caching.

7. **Web Server API Layer:** Acts as a backend intermediary handling authentication, push notifications, and call-related data exchange with the mobile/desktop applications and the Push Call Server (Steps 7 and 8).

8. **Database Interaction (via HAProxy):** Web Server accesses:
   - **Business DB**: Stores SIP configurations and user provisioning data (Step 10).
   - **Big Data DB**: Captures call records, app instance configurations, and state transitions (Step 11).

9. **Media Stream Handling:** Once a call is established, real-time audio is transmitted directly between clients and the Push Call Server via secure protocols (RTP/SRTP/DTLS-SRTP) (Step 12), ensuring optimal performance and encryption.


3.2. Security and Redundancy

- **Encrypted Communication**: All communication, signaling and media is protected using HTTPS, WSS, TLS, and SRTP/DTLS.

- **High Availability**: Load balancers (e.g., HAProxy) ensure redundancy and uninterrupted service delivery.

- **Push Notifications**: Ensure call delivery even when the app is inactive or in the background.

This robust system architecture supports MASCOM's objectives of delivering a reliable, secure, and unified communication experience across mobile and desktop platforms. It aligns with telecom best practices and supports future scalability.

4. Softphone (End-user Experience)

The MASCOM-branded softphone delivers a modern, intuitive, and feature-rich communication experience for end-users. With a clean design, seamless login options, and integrated voice, video, and messaging capabilities, it empowers users to stay connected anywhere, anytime, on both desktop and mobile devices. The softphone is **fully white-labeled** to reflect MASCOM's brand identity, ensuring a consistent user experience across all customer touchpoints.
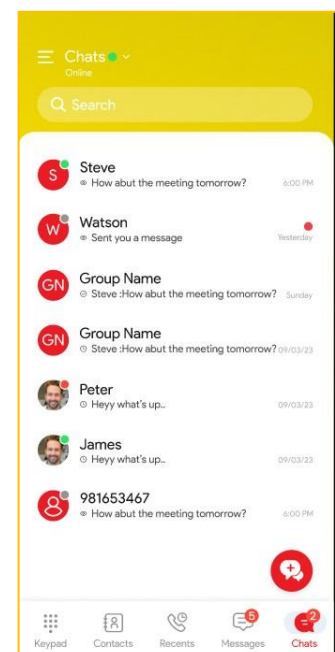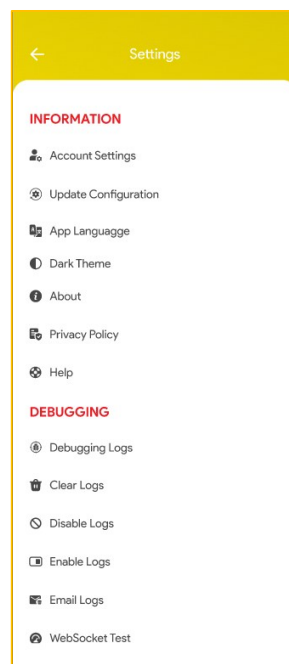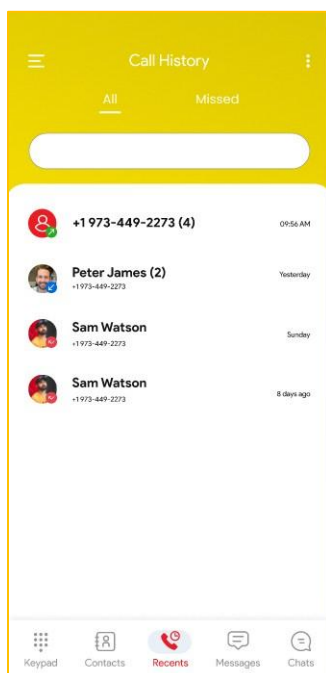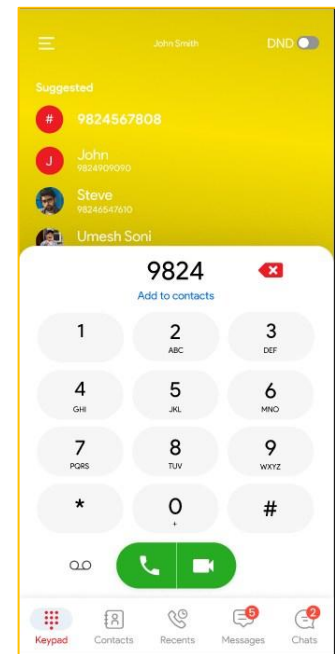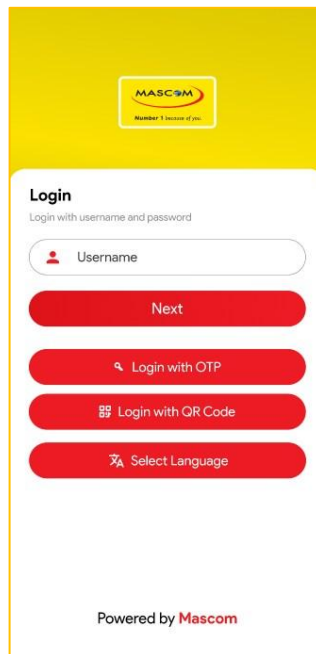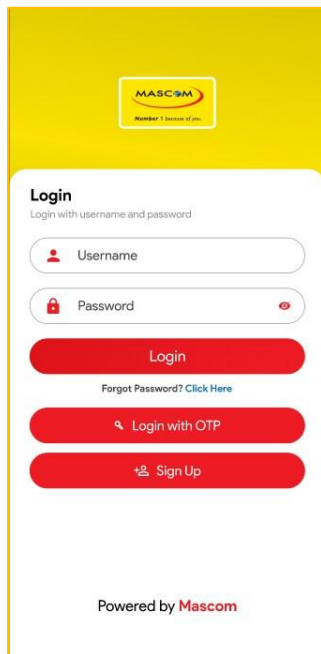
4.1. Key Features

- **Multi-Login Options**: Secure authentication via username/password, OTP, or QR code.
- **Intuitive Dialer & Call Management**: Make, receive, hold, transfer, and conference calls with ease.
- **Messaging & Chat**: One-to-one and group messaging with real-time status updates.
- **Call History & Recents**: Easy access to missed, received, and dialed calls.
- **Integrated Contacts**: Search and connect with colleagues or external numbers instantly.
- **Multi-language Support**: Enables localization for diverse user groups.
- **Themed for MASCOM**: Custom branding with MASCOM colors, logo, and identity.
- **Settings & Configuration**: User-controlled preferences, app language, dark mode, and account settings.
- **Debugging & Logs (for Admin/Support):** Built-in troubleshooting features such as enabling/disabling logs, email logs, and WebSocket tests.

4.2. Benefits

- **Seamless MASCOM Experience**: Delivers a unified look and feel aligned with MASCOM's brand.
- **Enhanced Productivity**: Combines voice, video, and messaging in a single application.
- **Mobility & Flexibility**: Enables users to work from anywhere using smartphones, tablets, or desktops.
- **Secure Communication**: Supports encrypted channels ensuring privacy and compliance.
- **Faster Onboarding**: Easy login methods (OTP/QR code) reduce setup complexity.
- **Centralized Management**: Integrated with the MASCOM provisional portal for simplified user provisioning and policy control.
- **Future-Ready**: Scalable architecture supports additional UC/CC features as MASCOM expands.
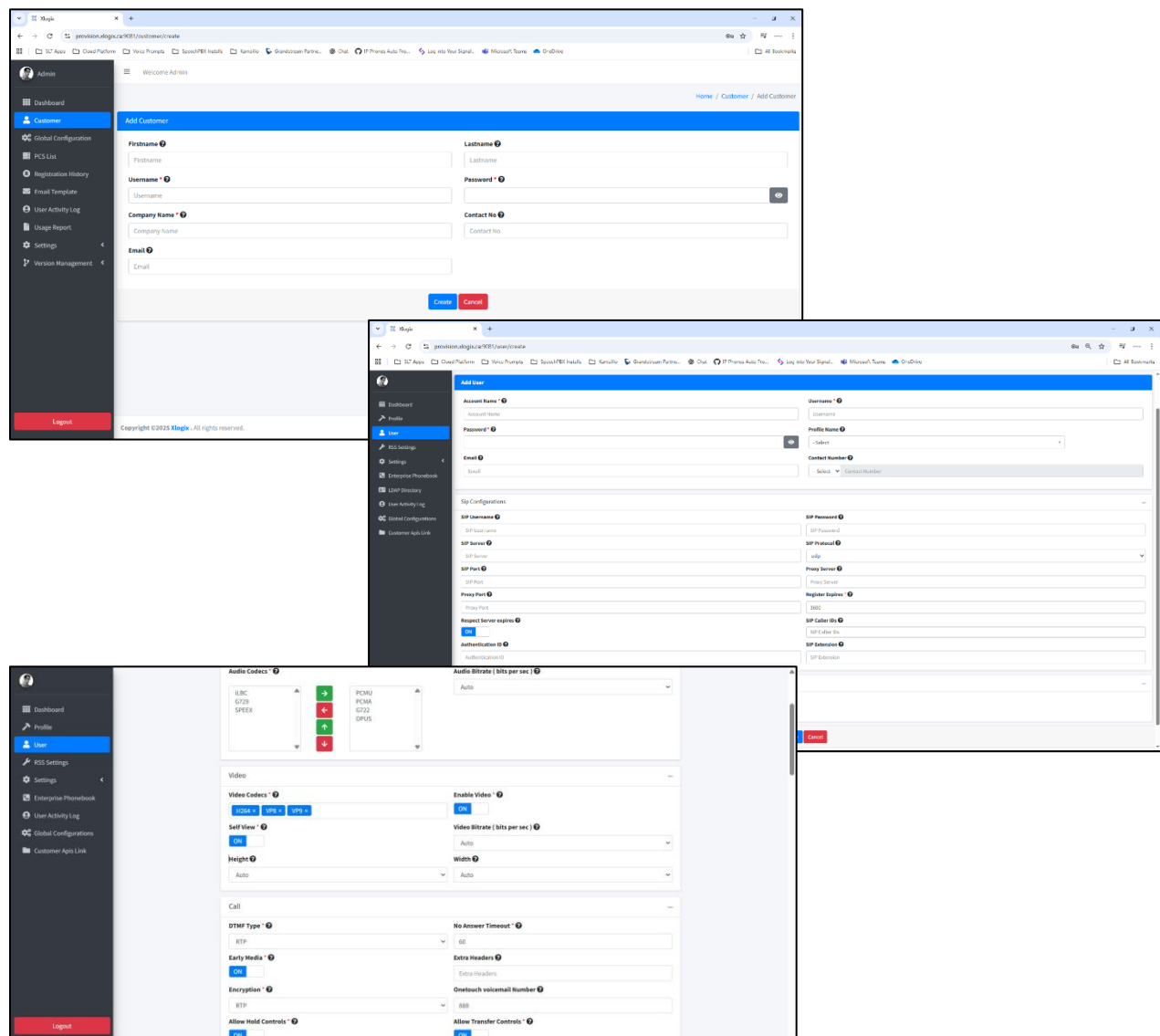
4.3. How Softphone Works

1. User logs into the softphone with credentials.
2. Application fetches configuration from the provisioning server.
3. User can make/receive calls with caller ID.

5. Provisional Portal (MASCOM Admin Portal)

The XLogix Provisioning Portal, customized for MASCOM, is a **centralized, web-based management interface** that simplifies the administration of communication services. It allows administrators to quickly create and assign softphone accounts, monitor device registrations and statuses, and manage user-specific features with ease. Each softphone can be individually configured with SIP credentials and preferences. The portal also supports bulk provisioning, allowing multiple softphones to be set up simultaneously by simply uploading or entering user details.

Beyond provisioning, the portal offers powerful tools for customer and user management, SIP configuration control, instant messaging enablement, and enterprise phonebook integration. With built-in reporting, activity logs, and version control, MASCOM gains a secure, scalable, and efficient environment for managing users and delivering a seamless communication experience.

6. Distinctive Benefits of Our Solution

- ➢ A fully white-labeled softphone aligned with MASCOM branding.
- ➢ Powered by the proven and reliable XLogix communication engine.
- ➢ An end-to-end solution covering softphone, backend, and provisioning portal.
- ➢ Enterprise-grade security with TLS/SRTP encryption.
- ➢ Simple login options and an intuitive user interface.
- ➢ Scalable and future-ready to support business growth.
- ➢ Centralized provisioning and management for administrators.
- ➢ Rapid deployment ensuring faster time-to-market.
- ➢ Dedicated support and continuous maintenance.
- ➢ A trusted solution with a strong track record in telecom and enterprise.

7. Conclusion

XLogix Softphone Integration with MASCOM solution delivers a secure, scalable, and fully branded communication experience that meets the needs of both end-users and administrators. With integrated voice, video, messaging, and presence features, the softphone enhances user productivity while maintaining the consistency of MASCOM's brand across desktop and mobile platforms.

Backed by a robust backend architecture, seamless provisioning, and enterprise-grade security, the solution ensures reliable performance and simplified management. As MASCOM continues to expand its digital offerings, this integration serves as a future-ready foundation for delivering unified communications at scale.

For more information, please do not hesitate to contact us