

RingCentral Automated Fax Downloader

Product Specifications & Security Whitepaper

1. Executive Summary

The RingCentral Automated Fax Downloader is a lightweight, standalone Windows application designed to automate the retrieval, routing, and management of inbound faxes across multiple RingCentral extensions.

By leveraging the RingCentral REST API, this application removes the manual overhead of checking fax inboxes, applying intelligent routing rules based on caller ID or page count, and securing sensitive API credentials at the enterprise level.

2. Security Architecture

Protecting proprietary data and unauthorized access to your RingCentral account is our highest priority. The application employs standard cryptographic protocols to secure data both at rest and in transit.

2.1 Data at Rest: AES-256 Encryption

API credentials (such as the Client Secret and JSON Web Tokens) are never stored in plain text. When configuration settings are saved to the local file system (config.xml), the application utilizes AES-256 (Advanced Encryption Standard) to encrypt these sensitive fields.

Furthermore, the application generates a unique cryptographic key dynamically tied to the host machine's identity and the active Windows User Profile.

- **The Benefit:** If the configuration file is accidentally shared, copied, or stolen by a malicious actor, the credentials remain completely unreadable on any other computer or user account.

2.2 Data in Transit: Enforced TLS 1.2

All network communication between the application and RingCentral's servers is encrypted using Transport Layer Security (TLS) 1.2. The application explicitly overrides legacy system defaults to force TLS 1.2 connections, actively preventing "downgrade attacks" and ensuring that your authentication tokens and downloaded fax documents are safe from Man-in-the-Middle (MITM) interception.

3. RingCentral API Limitations & Scaling

To ensure stable and uninterrupted service, the application is designed to operate within RingCentral's strict API rate limits. Consumers should be aware of the following platform constraints when configuring their polling intervals:

3.1 API Rate Limits (Per-Minute Throttling)

RingCentral uses a "Token Bucket" algorithm to prevent server abuse, categorizing API calls into Light, Medium, and Heavy tiers.

- Reading the Message Store (fetching faxes) is categorized as a **Heavy** API call.
- Under standard RingCentral Service Level Agreements (SLAs), accounts are typically limited to 40 to 50 Heavy requests per minute, per extension.
- **Application Safeguards:** The application allows a minimum polling interval of 10 seconds. However, if monitoring multiple extensions, setting the interval too low will exhaust the token bucket, resulting in temporary HTTP 429 (Too Many Requests) errors. The recommended polling interval for multi-extension setups is 60 seconds or higher. The application gracefully handles 429 errors by pausing and retrying on the next cycle.

3.2 Monthly Page Allotments & Billing

While RingCentral does not impose a hard API limit on the total volume of faxes downloaded or sent per month, users are subject to their RingCentral billing plan's pooled monthly fax page allotments (e.g., 1,000 pages, 10,000 pages). High-volume environments will not be throttled by the software, but may incur standard per-page overage charges from RingCentral on their monthly invoice.

3.3 Concurrent Channel Constraints

For high-volume incoming and outgoing faxes, RingCentral limits the number of faxes that can be actively transmitting over the telephone network simultaneously (concurrent channels). Faxes received while all channels are occupied are temporarily queued by RingCentral servers. The Automated Fax Downloader will seamlessly pick up these queued faxes as soon as RingCentral processes them into the user's inbox.

4. Technical Specifications

Component	Specification
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Operating System	Windows 10, Windows 11, or Windows Server 2016+
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Framework	Microsoft .NET Framework 4.7 or higher (Natively built-in to modern Windows OS)
Deployment	Standalone portable executable (.exe). No complex installation or third-party SDKs required.
Service Capability	Fully compatible with Windows Task Scheduler or wrapper tools (like NSSM) for invisible, background, and start-on-boot operation.
Rule Engine	Supports conditional routing based on FromNumber (Caller ID) and PageCount. Supports conditional deletion (Purge from RingCentral) or Read-Status updates.

5. Legal & Trademark Disclaimer

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