**CONFIGURATION & HARDENING GUIDE**

Metal Finishing Calculator v3.0.0

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| **Date:** | January 30, 2026 |
| **Prepared By:** | Psyrcuit LLC |
| **Audience:** | IT Administrators, System Administrators |

# 1. Prerequisites

## 1.1 System Requirements

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| **Component** | **Requirement** |
| **Operating System** | Windows 10 (1903+) or Windows 11 |
| **Architecture** | 64-bit (x64) required |
| **RAM** | 4 GB minimum, 8 GB recommended |
| **Disk Space** | 500 MB for application, additional for quotes/exports |
| **Display** | 1920x1080 minimum resolution recommended |
| **Network** | **NOT REQUIRED - Application is 100% offline** |

## 1.2 Required Permissions

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| --- | --- |
| **Action** | **Permission Required** |
| **Installation** | Write access to installation directory |
| **Daily Operation** | Standard user (no admin required) |
| **Settings Storage** | Write access to %APPDATA% or Shared Hub path |
| **Quote Storage** | Write access to designated quotes directory |

# 2. Installation

## 2.1 Installation Steps

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| **1.** | Obtain the application package from Psyrcuit (Metal Finishing Calculator-3.0.0-Portable.exe) |
| **2.** | Verify file integrity using provided SHA-256 checksum (see release notes) |
| **3.** | Copy executable to approved installation directory (e.g., C:\Program Files\MFC\) |
| **4.** | Set file permissions: Read & Execute for standard users, Full Control for administrators |
| **5.** | Create desktop shortcut if desired (optional) |
| **6.** | Configure antivirus exclusion if application is flagged (see Section 2.3) |

## 2.2 Recommended Installation Paths

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| **Environment** | **Recommended Path** |
| **Standard** | C:\Program Files\Metal Finishing Calculator\ |
| **ITAR/CUI** | C:\ITAR\Applications\MFC\ |
| **Network Deploy** | \\server\apps\MFC\ (read-only share) |

## 2.3 Antivirus Configuration

Electron applications may trigger false positives in some antivirus solutions due to the embedded Chromium runtime. If the application is blocked:

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| **1.** | Verify the file checksum matches Psyrcuit's published hash |
| **2.** | Add the installation directory to your AV exclusion list |
| **3.** | For Windows Defender: Settings → Virus & threat protection → Exclusions |
| **4.** | Contact Psyrcuit support if issues persist |

# 3. First-Run Configuration

On first launch, the application presents a setup wizard. Complete the following steps:

## 3.1 Setup Wizard Steps

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| **Step** | **Action** |
| **1. Welcome** | Review welcome screen, click Continue |
| **2. Theme Selection** | Choose visual theme (does not affect functionality or security) |
| **3. Estimator Name** | Enter estimator's name (used in quote metadata for audit trail) |
| **4. Quotes Directory** | Select directory for saving quote files (ensure user has write access) |
| **5. Settings Location** | Choose Local (AppData) or Shared Hub (network folder) |
| **6. License Key** | Enter license key provided by Psyrcuit (or continue in demo mode) |
| **7. Complete** | Review summary and finish setup |

## 3.2 Settings Storage Options

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| **Option** | **Path** | **Use Case** |
| **Local** | %APPDATA%\Metal-Finishing-Calculator\ | Single computer, single user |
| **Shared Hub** | \\server\MFC-Hub\Settings\ | Multiple computers, shared config |

# 4. Shared Hub Setup (Multi-Computer)

The Shared Hub feature allows multiple computers to share process definitions, fee structures, and templates while maintaining per-computer settings. All data remains within your network boundary.

## 4.1 Create Shared Hub Folder

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| **1.** | Create a network share accessible by all MFC workstations |
| **2.** | Recommended path: \\server\MFC-Hub\ or similar |
| **3.** | Set NTFS permissions: Domain Users = Modify, Administrators = Full Control |
| **4.** | Set Share permissions: Domain Users = Change, Administrators = Full Control |

## 4.2 Required Directory Structure

The application creates this structure automatically when configured, or you can pre-create it:

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| **\\server\MFC-Hub\**  ├── Settings\ # Per-computer settings files  │ ├── mfc\_settings\_[ID1].json  │ ├── mfc\_settings\_[ID2].json  │ └── backup\ # Automatic settings backups  ├── Quotes\ # Shared quote storage (optional)  │ └── revisions\ # Quote revision history  ├── Templates\ # Shared quote templates  └── Backups\ # Organization-wide backups |

## 4.3 Configure Workstations

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| **1.** | Launch MFC on each workstation |
| **2.** | Go to File → Directories (or use first-run wizard) |
| **3.** | Select "Use Shared Hub" and enter the network path |
| **4.** | Optionally migrate existing local settings to the hub |
| **5.** | Each computer maintains its own settings file identified by MAC address hash |

# 5. License Activation

License validation is performed entirely offline using a cryptographic hash of the computer's MAC address. No network communication occurs.

## 5.1 Activation Steps

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| **1.** | Launch the application and go to Help → Unlock Full Application |
| **2.** | Note the Computer ID displayed (this is a hash of your MAC address) |
| **3.** | Provide the Computer ID to Psyrcuit to receive your license key |
| **4.** | Enter the license key in the activation dialog |
| **5.** | The key is validated locally and stored in the settings file |

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| **ℹ️ IMPORTANT:** License keys are bound to a specific computer's MAC address. If the network adapter is replaced or the computer changes, a new license key will be required. Contact Psyrcuit support for license transfers. |

# 6. Security Recommendations

MFC inherits the security posture of the host workstation. Implement these recommendations for ITAR/CUI environments:

## 6.1 Workstation Hardening

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| **Control** | **Recommendation** |
| **User Privileges** | Run MFC as standard user (not administrator) |
| **Disk Encryption** | Enable BitLocker on all drives containing MFC data |
| **Antivirus** | Keep Windows Defender or enterprise AV enabled and updated |
| **Windows Updates** | Maintain current OS patches |
| **Screen Lock** | Configure automatic screen lock after 15 minutes of inactivity |
| **USB Devices** | Restrict removable media per organization policy |

## 6.2 File System Security

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| **Location** | **Recommended Permissions** |
| **Application Directory** | Users: Read & Execute | Admins: Full Control |
| **Quotes Directory** | Estimators: Modify | Others: Deny or Read-only |
| **Settings (Local)** | Current User: Full Control | Others: Deny |
| **Shared Hub** | Domain Users: Modify | Admins: Full Control |

## 6.3 Network Considerations

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| **✓ NO NETWORK ACCESS REQUIRED**  MFC does not require internet access. You may:  • Block the application in your firewall (it will function normally)  • Deploy on air-gapped workstations  • No firewall rules, proxy configuration, or network exceptions are needed |

# 7. What NOT to Do

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| **⚠️ AVOID THESE CONFIGURATIONS**  **✗ Do not modify application files** – may break functionality or void support  **✗ Do not grant internet access** – not needed; no benefit to enabling  **✗ Do not disable Windows security features** – MFC relies on OS-level protections  **✗ Do not share license keys between computers** – keys are hardware-bound  **✗ Do not store quotes in user profile temp folders** – may be cleared by cleanup tools  **✗ Do not run as Administrator** – violates least privilege principle |

# 8. Backup & Recovery

## 8.1 What to Back Up

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| **Data** | **Location** | **Priority** |
| **Quote Files** | User-configured quotes directory | **Critical** |
| **Settings** | %APPDATA% or Shared Hub\Settings\ | **High** |
| **Application** | Installation directory | Low (re-download from Psyrcuit) |

## 8.2 Recovery Procedure

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| **1.** | Install MFC on the new/rebuilt workstation |
| **2.** | Restore quotes directory from backup |
| **3.** | Restore settings file to %APPDATA% or configure Shared Hub path |
| **4.** | If MAC address changed: Contact Psyrcuit for license key transfer |
| **5.** | Verify application launches and data is accessible |

# 9. Add-On Management

## 9.1 Cryptographic Enforcement (Built-In)

The application enforces Ed25519 cryptographic signature verification on all add-ons automatically. This is not a configurable setting – it is hardcoded into the application binary. No administrator action is required to enable signature checking.

Verification occurs at five enforcement points: installation, post-copy check, application launch, on-demand re-verification, and renderer load gate. An add-on that fails verification at any point is rendered inert (visible but non-functional).

## 9.2 Additional Installation Controls

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| **Control** | Description |
| **Install from folder** | Add-ons are installed by selecting a local folder containing the add-on files. No network download mechanism exists. |
| **Manifest validation** | Each add-on must include addon\_manifest.json with required fields (id, name, version, author, entryPoint). Invalid manifests prevent registration. |
| **Signature file required** | Each add-on directory must contain addon.sig. Missing signature files result in “unverified” status. |
| **Re-verification** | Use the Add-On Manager UI to trigger on-demand re-verification of any installed add-on. |
| **Uninstall** | Add-ons can be removed through the Add-On Manager UI, which deletes the add-on directory. |

## 9.3 Disabling the Add-On System

The add-on system is enabled by default. There is no built-in toggle to disable it entirely in v3.0.0. However, removing all add-on directories from the add-ons folder effectively disables add-on functionality. The application operates normally without any add-ons installed.

## 9.4 ITAR Environment Guidance

For ITAR-controlled environments: add-on installation requires only local file copy with no network activity. Add-on code executes entirely within the offline application. No add-on data is transmitted externally. The add-on system is compatible with air-gapped deployments.

## 9.5 Unauthorized Modification Liability Notice

**WARNING: Modifying the application binary to alter, disable, or bypass the Ed25519 signature verification system voids all warranties, support agreements, and compliance certifications. Psyrcuit LLC accepts no responsibility for the behavior of the application after such modifications.**

For technical support: support@psyrcuit.com

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