AutoCAD Batch DWG Processor – Development Report

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1. Introduction

This report outlines the development of an AutoCAD batch processor for `.dwg` files using PowerShell and `accoreconsole.exe`. The processor automates the execution of AutoCAD scripts on multiple DWG files, with logging, error handling, and file management. The project evolved from a basic prototype (`ProcessRun.ps1`) to a robust production-ready script (the "real version").

2. Initial Prototype: `ProcessRun.ps1`

2.1 Description

The initial version of the script (`ProcessRun.ps1`) provided a basic batch processing workflow:

- Iterates over DWG files in a specified folder.
- Launches AutoCAD console (`accoreconsole.exe`) with a `.scr` script for each file.
- Waits for completion and logs start/end times.
- Records the number of errors encountered during processing.

2.2 Key Features

- Logs machine name, user name, script file, start/finish times.
- Tracks total files and error counts.
- Sequential processing of DWG files.

- Simple, minimal logging format (`Process_Log.txt`).

2.3 Limitations

- No timeout mechanism: hung or large files could block the batch.
- No verification of output `.txt` files.
- `.bak` files were left unmanaged.
- Minimal error handling: only exit codes logged, exceptions not fully captured.
- No per-file duration tracking.
- No session summary with detailed statistics.

3. Real Version: Advanced `AutoCAD Batch DWG Processor`

3.1 Description

The “real version” of the script expanded on the prototype by adding robustness, error handling, logging, and file management features.

Key objectives achieved:

- Reliable batch processing for large numbers of DWG files.
- Detailed logging of process information.
- Automatic cleanup of intermediate `.bak` files.
- Timeout handling to prevent hung processes.
- Verification of script outputs (`.txt` files).

3.2 Features

1. **Dynamic Folder Selection**
    a. Prompts the user to select a folder if none is provided.
2. **Path Validation**
    a. Checks that DWG folder, AutoCAD executable, and script file exist before starting.
3. **Detailed Logging**
    a. Logs start/end time per file, exit code, and duration.

   b. Tracks `.txt` output presence.
   c. Logs machine name, user, script used, and session start/end times.
4. **Error Handling**
   a. Catches exceptions during AutoCAD process execution.
   b. Differentiates between SUCCESS, ERROR, and EXCEPTION statuses.
5. **Timeout Handling**
   a. Configurable timeout per file.
   b. Kills AutoCAD processes exceeding the timeout.
6. **.bak File Cleanup**
   a. Deletes previous DWG's `.bak` file before processing the next file.
   b. Final cleanup ensures no leftover `.bak` files.
7. **Session Summary**
   a. Total files processed, errors, `.txt` generated, total duration.
   b. Outputs summary to log file and console.

4. Evolution Summary

Feature / Aspect	Prototype (`ProcessRun.ps1`)	Real Version
Folder selection	Fixed path only	Dynamic, folder dialog
Logging	Basic, minimal	Detailed per-file and session summary
Error handling	Checks exit code only	Checks exit code + exceptions
Timeout handling	None	Configurable per file
.txt output verification	None	Checks for `.txt` existence
.bak file management	None	Cleans up `.bak` after each file
Duration tracking	None	Tracks duration per file and total session
Console output	Minimal	Color-coded, informative
Robustness	Low	High, production-ready

5. Lessons Learned

1. **Automation Needs Safety Nets:** Handling hung processes, `.bak` files, and output verification is critical for batch workflows.
2. **Logging Matters:** Detailed logs simplify debugging and help in auditing large batches.
3. **Extensibility:** Modular parameters (folder path, script path, timeout) make the script flexible for different environments.
4. **User Feedback:** Color-coded console messages improve usability.

6. Conclusion

The AutoCAD Batch DWG Processor evolved from a simple prototype into a robust, production-ready tool. The real version addresses the limitations of the initial script by incorporating:

- Timeout control
- Comprehensive logging
- Output verification
- `.bak` file management
- Enhanced error handling

This tool provides a reliable workflow for batch processing DWG files in automated and semi-automated environments, improving efficiency and reducing manual intervention.