Session: Repository Setup Complete - 2025-09-12

Context Loading

Previous Sessions: Claude conversation with project prompt and network diagram **Current Phase:** Network Architecture & Planning (25% complete) **System Focus:** Documentation structure setup and GitHub repository creation **Git Branch:** main **Repository:** https://github.com/[username]/home-automation-project.git

Goals This Session

- [x] Create scalable documentation structure
- [x] Set up repository organization
- [x] Define session management strategy
- [x] Implement first session state files
- [x] Create PowerShell setup script for Windows
- [x] Run repository structure creation
- [x] Install and configure Git
- [x] Initialize local Git repository
- [x] Create GitHub repository
- [x] Push project to GitHub
- [x] Document complete setup procedure

Decisions Made

Decision 1: Modular Session-Based Documentation

Problem: Claude context limits will be exceeded as project grows **Solution:** External git storage for configs, Claude sessions for decisions/context **Rationale:** Separates large data (configs) from decision context (reasoning) **Files Affected:** All future documentation structure **Git Commit:** Initial commit completed

Decision 2: Phase-Based Directory Structure

Problem: Need organized approach for complex multi-system project
Solution: Separate directories by system type and project phase **Rationale:** Matches project implementation phases, easier navigation **Files Affected:** Repository root structure **Git Commit:** Initial commit completed

Decision 3: Windows-Compatible Setup Process

Problem: Initial bash script not compatible with Windows environment **Solution:** Created PowerShell script version with complete Windows compatibility **Rationale:** User is on Windows, needed native PowerShell solution for repository setup **Files Affected:** setup-repo.ps1 (PowerShell version) **Git Commit:** Initial commit completed

Decision 4: Project Name Change to "home-automation-project"

Problem: Original name "home-automation-safety" requested to be changed **Solution:** Renamed to "home-automation-project" for clarity and simplicity **Rationale:** Cleaner name, avoids potential conflicts, easier to reference **Files Affected:** All documentation, PowerShell script, GitHub repository **Git Commit:** Initial commit with new name

Technical Context

Key Files Referenced:

- `Session State Save - Home Automation Project 09-09-25.pdf` - Previous session context
- `Home Automation Safety System - Project Prompt.pdf` - Project requirements
- `network_diagram.mermaid` - Network architecture
- `setup-repo.ps1` - PowerShell repository setup script

Current State:

- Working: Complete repository structure created and pushed to GitHub
- Issues: None - all Windows compatibility issues resolved
- Partially Done: Ready to begin OpenWrt router configuration phase

Repository Structure Created:

```
home-automation-project/
├── docs/
│   ├── session-states/     # Claude session management
│   ├── decisions/          # Architecture decision records
│   ├── procedures/         # Step-by-step processes
│   └── troubleshooting/    # Issue resolution guides
├── configs/
│   ├── openwrt/            # Router configurations
│   ├── home-assistant/     # HA automation configs
│   ├── frigate/            # NVR system configs
│   ├── esphome/            # Sensor controller configs
│   └── proxmox/            # Virtualization configs
├── hardware/
│   ├── stl-files/          # 3D printing files
│   ├── wiring-diagrams/    # Circuit documentation
│   └── part-lists/         # Component specifications
└── scripts/
    ├── setup/              # Installation automation
    ├── backup/             # Backup procedures
    └── monitoring/         # Health check scripts
```

Artifacts Created/Modified

- [x] Scalable Documentation Structure Template: Complete repository organization strategy
- [x] PowerShell Repository Setup Script: Windows-compatible structure creation
- [x] Updated Session State Templates: Reusable templates for future sessions
- [x] Initial README: Project overview with corrected structure display
- [x] GitHub Repository Setup Procedure: Complete step-by-step process documentation
- [x] Network Architecture Decision Record: 4-VLAN design documentation
- [x] Session State Save: Current session documentation

Next Session Prep

Immediate Next Steps:

1. Begin OpenWrt router configuration for 4-VLAN network
2. Create specific VLAN interface configurations
3. Implement firewall rules for security segmentation
4. Set up network testing procedures

Files to Review:

- Previous firewall configuration artifact from original session
- Network diagram artifact (4-VLAN architecture)
- docs/decisions/001-network-architecture.md
- PrintAirPipe hardware/software resources

Context Needed:

- GL.iNet GL-MT6000 specific OpenWrt configuration requirements
- VLAN interface setup procedures for router
- Firewall rule syntax and security policies
- Network testing and validation methods

Dependencies:

- Router must be ready for OpenWrt firmware flash
- Network planning documentation complete (✅ done)
- Repository structure established (✅ done)
- GitHub backup active (✅ done)

Issues & Blockers

- ~~Git not installed on Windows system~~ ✅ RESOLVED: Installed Git for Windows
- ~~Author identity unknown for Git commits~~ ✅ RESOLVED: Configured git user.name and user.email
- ~~PowerShell script compatibility issues~~ ✅ RESOLVED: Created Windows-native PowerShell version
- ~~Repository structure needed~~ ✅ RESOLVED: Complete structure created and documented

Git Integration

Commits This Session:

- Initial commit: "Initial repository structure and documentation"
- Repository successfully pushed to GitHub

Files Modified:

- Created entire repository structure from scratch
- All placeholder configuration files created

New Files Created:

- README.md (project overview)
- docs/session-states/session-template.md
- docs/session-states/20250912-initial-documentation-session01.md
- docs/decisions/001-network-architecture.md
- All configuration placeholders in configs/ directory
- Complete directory structure for project phases

GitHub Repository: https://github.com/[username]/home-automation-project.git **Current Branch:** main **Repository Status:** Live and accessible

Key Resources for Next Session

PrintAirPipe Integration:

- Hardware STL files: https://nerdiy.de/en/product-2/printairpipe-125-actuator-sensor-set-3d-printable-stl-files/
- ESPHome code: https://github.com/Nerdiyde/ESPHomeSnippets/tree/c0135795dc180c6ff4a1306b2f5982ef3db386c3/Snippets/PrintAirPipe

Network Configuration:

- 4-VLAN architecture documented in docs/decisions/001-network-architecture.md
- VLAN 20: Automation & Management (192.168.20.0/24) - Internet access
- VLAN 30: CCTV (192.168.30.0/24) - No internet, HA bridge access
- VLAN 40: Storage (192.168.40.0/24) - No internet, Frigate access
- VLAN 50: IoT Sensors (192.168.50.0/24) - No internet, HA control only

Session Continuation Instructions

To continue this project in a new session:

1. **Load this session state:** Copy and paste this entire document
2. **Add context prompt:** "Please review this project state and confirm understanding. I'm ready to continue from where we left off."
3. **Specify next focus:** "I want to begin implementing the OpenWrt router configuration for the 4-VLAN network design."
4. **Reference repository:** Mention that the GitHub repository is live and ready

Project Status Summary

- **Overall Progress:** 25% complete (up from 15%)
- **Current Phase:** Network Architecture & Planning
- **Infrastructure:** Repository structure complete, GitHub active
- **Documentation:** Session management system operational
- **Next Milestone:** OpenWrt router configuration implementation
- **Risk Level:** Low (infrastructure foundation solid)
- **Confidence Level:** High (clear path forward established)

Session Duration: 120 minutes **Complexity Level:** Medium (Windows compatibility challenges overcome) **Success Rating:** 5/5 (all goals achieved, repository live on GitHub, ready for implementation) **Date Completed:** 2025-09-12 **Ready for Next Phase:** ✅ Yes - OpenWrt router configuration

Restoration Instructions

To continue this project:

1. Paste this entire session state document into a new Claude conversation
2. Add: "Please review this project state and confirm understanding. I'm ready to continue with the OpenWrt router configuration."
3. Reference the live GitHub repository for any needed file access
4. Begin with VLAN interface configuration for GL.iNet GL-MT6000 router

Session State Version: 2.0
Last Updated: September 12, 2025