**Procedure for LEEN Node Application**

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| **Revision History** | | |
| V0\_1 | 6-3-19 | Original submission. |

**Software Stack**

LEEN **–** A *lean* stack for modern SPA web development on embedded platforms. I made this up so you won’t find this acronym used on the Internet anywhere!

**L**inux – Runtime environment.

**E**xpress – Application framework.

**E**JS – A templating engine to generate markup with JS.

**N**ode – JS runtime.

Wait, no database?! I usually don’t run one, but MySQL and SQLite pair nicely with this setup on our hardware. If I need to store some simple secure data like usernames and passwords for a few local accounts, I hash it and store it in a text file. Configurations all go in JSON format.

**System Overview**



**LEEN Web Application**



*Procedure (see example project)*

1. Prep Environment (see *App Install Procedure v0\_3.docx*).
2. Create new Node project:



1. Install Express:



1. Index.js – Application entry point. Test server.
2. Index.html – Although express can send HTML directly, the preferable method is to render an HTML file. This is also where we attach CSS styles or a CSS framework like Bootstrap. Test render methods.
3. Install EJS:



1. Index.ejs – Replaces index.html.
2. Test Phoenix Contact Node API module. For general information on the PLCnext API, see here: <https://www.plcnext.help/te/Service_Components/REST_data_interface/REST_data_interface_Introduction.htm>.
3. Connect module to application entry point.
4. Demonstrate EJS with PLCnext data.