

Many items were [taken from here](#) and [here](#).

Code

- ☐ Are CI builds passing? If no, why?
- ☐ Is the code easily understood?
- ☐ Does the code work? Does it perform its intended function, the logic is correct, etc?
- ☐ Does the error handling work?
- ☐ Is memory usage acceptable, even with large inputs?
- ☐ Is code covered by functional or unit tests?
- ☐ Are error paths covered by functional or unit tests? All errors which are relatively easy to check must be checked: error conditions like "open() failed after stat() was successful" or "array size greater than INT_MAX" may be ignored for being just as unlikely as uneasy to test, but otherwise having bugs in code which does error handling is way too common to be ignored.
- ☐ For new code, are unit tests written where needed?
- ☐ Are invalid parameter values handled where needed?
- ☐ Can any global/static variables be replaced?
- ☐ Are variables/functions named intuitively?
- ☐ Can any function attributes be used?
- ☐ Is there any redundant or duplicate code?
- ☐ Is the code modular enough?
- ☐ Can any of the code be replaced with library functions?
- ☐ Do loops have a set length and correct termination conditions?
- ☐ Can any logging or debugging code be removed?
- ☐ Are there any unneeded assert statements?
- ☐ Does the code conform to the [style guide](#)?
- ☐ Optimization that makes code harder to read should only be implemented if a profiler or other tool has indicated that the routine stands to gain from optimization. These kinds of optimizations should be well-documented and code that performs the same task simply should be preserved somewhere.
- ☐ Are return values being checked?
- ☐ Are there any use after frees?
- ☐ Are there any resource leaks? Memory leaks, unclosed sockets, etc.
- ☐ Are there any null pointer dereferences?
- ☐ Are any uninitialized variables used?
- ☐ Are there any cases of possible arithmetic overflow?

Documentation

- ☐ Are there any superfluous comments?
- ☐ Where needed, do comments exist and describe the intent of the code?

- ☐ Are any comments made outdated by the new code?
- ☐ Is any unusual behavior or edge-case handling described?
- ☐ Are complex algorithms explained and justified?
- ☐ Is code that depends on non-obvious behavior in external libraries documented with reference to external documentation?
- ☐ Is the use and function of API functions documented?
- ☐ Are data structures/typedefs explained?
- ☐ Is there any incomplete code, e.g., code marked `TODO` , `FIXME` , or `XXX` ?