

4.4.1 Functional Requirements Assessment

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Things to Consider When Designing Distributed systems

- **Note:** Because these are [Functional Requirements](#), they need to be written specifically for the system being specified in the proposal or solicitation.

In DIDO, the following areas minimally cover Functional Requirements:

Hardware Architecture

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The [goal](#) of hardware functional requirements is to decide which hardware architectures are going to be supported and which, if any, will be left out.

- [Which Platforms must be supported?](#)
- [Which Embedded Systems must be supported?](#)
 - [Which Standalone Subsystems must be supported?](#)
 - [Which Standalone Systems must be supported?](#)
 - [Which Network Systems must be supported?](#)
- [Which servers must be supported?](#)
 - [Which software Servers must be supported?](#)
 - [Which hardware Servers must be supported?](#)
- [Which desktop computers must be supported?](#)
- [Which handheld computers must be supported?](#)
- [Which supercomputers must be supported?](#)
- [Which network computers must be supported?](#)

Operating System

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[Nodes](#) on the distributed network must be designed specifically for the [operating system](#) that runs on the node. So the [distributed system](#) must support more than one operating system. But too many OSs can cause the support and maintenance of the system to be more difficult and costly.

- [Which operating systems must be supported?](#)

Network

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A distributed system is a collection of networked nodes, that run on networking equipment all connected using wireless or USB connections. Network functional requirements is to decide which [platform](#), devices, and permissions are used throughout the system.

- [Which network platforms must be supported?](#)
- [Which networking architectures must be supported?](#)
- [Which networking access must be supported?](#)

RunTime Libraries

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RunTime functional requirements is to establish a RunTime Library that can communicate to with different operating/hardware platforms across the system.

- [Which runtime environments must be supported?](#)

Community/Development Tools

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Tool functional requirements include making sure your system has all the necessary development, management, and operation tools for the project.

- [Which support tools must be supported?](#)

Note: The tool list provided is not exhaustive.

Virtualized Nodes

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Utilizing Virtual Nodes in a distributed system can provide flexibility because a virtual node can run on many hardware/operating system platforms. Virtual Node functional requirements entail determining which type of virtual node is necessary for the system.

- [Which types of virtualization nodes must be supported?](#)

Data

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Every [node](#) based on its [roles](#), manages and controls data. The data within the node is [classified](#) as either: [ledger data](#), [ancillary data](#), or [external data](#). Regardless of the clas of data sotred on a node, it is often controlled by [regulatons](#), [Policies and Procedures](#).

- [Are there Health Insurance Portability and Accountability Act \(HIPAA\) restrictions?](#)
- [Are there General Data Protection Regulation \(GDPR\) restriction?](#)
- [Are there Data Protection Act 2018 restrictions?](#)
- [Are there California Consumer Privacy Act \(CCPA\) restrictions?](#)
- [Are there data Retention Policy restrictions?](#)

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