

# Design

## Baseline Technical Specifications

Where an existing solution is already in place, analyse its implementation, assess the strengths and weaknesses of the implementation, and decide if any parts can be reused. Do this from a technical and user-oriented perspective.

Identify the architecture patterns, technologies used, data flows, security measures and so on. Identify 3 party interactions and their mechanisms.

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## Target Technical Specifications:

Provide technical solutions that fulfil the agreed requirements. Identify software languages, service interactions, database choices, cloud providers, third party suppliers and other strategic choices.

APIs may also be defined here with the understanding that these are prone to change as the project progresses.

Security is planned from the outset, including where data will be stored and encrypted, defensive network topologies and both authorisation and authentication are considered.

Robustness is planned from the outset, with redundancy in storage and infrastructure across multiple zones or regions. Traffic management, load balancing and DNS records all contribute to this.

Scalability is planned from the outset, either with serverless infrastructure, VM scale-sets or containers and container orchestration. Database partitioning should be considered.

Where there is more than one viable solution, a list of the pros and cons should be collated.

Engage the development team early in this process, their input will ensure the design is technically feasible and utilises their skills effectively. Defining the technical architecture should be a collaborative process, with developers having the opportunity to propose their own solutions and clarify their understanding. Technical architecture is a guide for development, not a rigid plan. Allow for flexibility of implementation but ensure the overall structure and principles are adhered to.

# Gather Team and Stakeholder Feedback

Technical assistance is offered to the wider team and key stakeholders to guide them through the implications of the choices they make at this level. The pros and cons of the viable solutions must be discussed and a strategy chosen that is aligned to achieving both technical feasibility and financial sustainability.

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