Instruction

Due to the technical nature of this document, NUIT Cyberinfrastructure engineers, in collaboration ITMS application teams and business subject matter experts, should complete it.

This template provides the final detailed technical (infrastructure) specifications and design to address the business needs outlined in the *Project Charter* and the *Business Requirements Analysis*. The *High-Level Technical Design Template* that was completed during the Inception phase of the project should be used as a starting point for this more detailed template.

***If there are significant changes to requirements or design, this template should be updated accordingly and funding to support the changes should be verified and approved.***

1. Project Overview

Provide high-level information to help Cyberinfrastructure engineers understand the solution being proposed as well as the business reasons supporting the solution.

1.1 Objective

Describe the objective of the project (2 to 3 sentences)

1.2 Business Case

Provide the business case for the project, including the problem being solved, who/what area is impacted, and the business benefits of the project. (A few sentences will be sufficient).

1.3 Risks

Document specific risks that have been identified or that should be considered.

1.4 Out of Scope

Delineate specific activities, capabilities, and items that are out of scope for the project.

2. Technical Design Diagram

Provide a diagram that illustrates all new and existing technical resources required for the successful completion of this project. The diagram should include the following:

* How new infrastructure will be located and how it will connect within existing enterprise infrastructure.
* Servers, storage, network – assume all are virtual unless there are specific technical issues that are expected to require physical resources.
* Logical data flow.
* Critical ancillary equipment or connections where needed.

**3. Technical Specifications**

Provide detailed technical specifications for required infrastructure as outlined below.

3.1 Servers

Under the appropriate heading (3.1.1 through 3.1.4 below), list a brief description and function for each server that is needed, and include the following information:

* Operating System
* Application memory requirements
* Application CPU requirements
* Functional characteristics of the application and whether there are any system dependencies
* Expected application transaction volume

3.1.1 Application Servers

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3.1.2 File Servers

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3.1.3 Web Servers

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3.1.4 Database Servers

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3.2 Server Request Forms

NUIT’s Office for Cyberinfrastructure (CI) provides hosting services as outlined in the ***Data Center Application and Equipment Hosting Services*** policy. CI has developed various data collection forms to enable more efficient collection of the data required to support these services. At this stage of the process, you should enter the request forms for required servers. All server requests forms can be found at URL: ***software.northwestern.edu/server\_hosting.***

**3.3 Access Requirements**

Define the access requirements related to the following:

* Number ofusers requiring simultaneous access to the application
* List user communities who will need access, including
  + ITMS Developers
  + Departmental /School IT
  + Vendors
  + Other

**3.4 Databases**

List a brief description and function for each database that is needed, and include the following information:

* Oracle or SQL Server
* Database version required
* Memory requirements
* CPU requirements
* Amount of storage needed the first 12 months (in GB)
* Projected annual growth (% or GB)
* Expected transaction volume
* Special data preservation requirements
* Provide technical specification data sheet for the application if available

**3.5 Storage Needs exclusive of databases**

Describe the following elements related to storage needs, excluding database requirements:

* The amount of storage needed for the first 12 months (in GB).
* Projected annual growth (% or GB).
* Data protection.
* Note: The NUIT data backup standard is weekly fulls with a two-week incremental rotation; fulls are retained for 29 days. If this does not meet your needs, specify requirements here.

4. Resource Needs

Identify the staff resources needed to successfully complete this project. Also identify the staff, technical, and other resource dependencies that should be considered.

* Staff Resources
* Staff Dependencies
* Technical Dependencies
* Other Dependencies

5. Assumptions

Enumerate all additional assumptions that will impact the technical design, documentation and cost estimate for this project.

6. Concerns and Issues

Enumerate all additional concerns and issues that may impact the technical design, documentation, or cost estimate for this project.

**7. Projected Costs**

Update the cost-estimate prepared for the *High-level Technical Design,* completed during the Inception phase of the project. Alternatively, prepare a new cost estimate using Excel. Include the detailed calculation information on one tab and the summary estimate information on a separate tab. The spreadsheet should accompany this document (whether electronic or hard copy) in all communications. ***If the cost estimate is greater than the one prepared during the Inception phase, you may need approval to proceed.***

**Document Tracking**

The following chart is used to log of all changes made to this document.

| **Version** | **Date of edit/change** | **Who made the edit/change** | **Description of edit/change** |
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