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| --- |
| **BLUE TEXT**: Instructions regarding a document section. Remove the blue instructional before approving.**RED TEXT**: Replace with Solution or Project specific content. Change the font color to black.**BLACK TEXT**: Recommended language that can remain or be changed to meet the Project Team’s needs.Using Templates* Always retrieve the current template when creating new documents.
* When modifying an existing document compare that document against the current template. Address any differences and update the document.
* If certain sections of a template do not apply, enter “Not Applicable” beneath the Section Header and provide appropriate justification. Do not remove Section Headers. If all subsections under a higher level section are not applicable, remove the sub-section headers and include the justification under the remaining high level section header. For example, if there is a section 3, 3.1, 3.1.1, 3.1.2, and 3.2, and all are not applicable, remove the sections 3.1, 3.1.1, 3.1.2, and 3.2 and write Not Applicable” and the rationale under section 3.
* If needed, add a section or sections to the appropriate area of the template.
* Update the Table of Contents before circulating for approval.
* Ensure the version number in the Page Header and the Revision History Table is correct
* Ensure the Revision Date in the History Table is set to the date the document was last modified prior to routing for Approval.
* Templates may be merged. If so, include all sections of each template.

**-- DELETE THIS INSTRUCTION BOX –** |

**NO APPROVALS REQUIRED**

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# Purpose

This document presents the Solution Development Lifecycle (SDLC) Design / Installation Information for a Project affecting the Solution Name.

This template is a consolidated design specification, including sections for Technical Architecture, Configuration, and Software Design. Project teams may choose to break this into multiple documents addressing each of these separately or in some other combination.

# Scope

Define the Design / Installation Elements that are applicable and within the scope of the document. Examples include; Coding Standard reference, Solution Design Specification, Configuration Specification, and Technical Architecture. Identify if/where/how other Design / Installation Elements will be captured.

## Exclusions, Assumptions, and Limitations

Document any exclusions, assumptions and limitations

# Solution Design Overview

Describe the Solution here from a technical perspective. This may include the Solution Architecture, Hardware and Software listings, Data Flow Diagrams, and Interfaces where applicable.

# Technical Architecture

When applicable, describe the hardware and middleware for the Solution. Standard infrastructure elements used by many Solutions (routers, switches, etc.) need not be included. Multi-site Solutions may include information for the entire Solution in a single document, or may produce one document for each site.

The following headings are a suggested organization of the document. References to published Vendor specifications may be included.

## Hardware Inventory, Specifications and Locations

### Servers

Include requirements for each unique server configuration. This information may be in tabular or prose format, and may be organized by location, environment, type of server, or other appropriate method.

For each server configuration include the following, at minimum:

* Manufacturer and Model Number
* The number of servers using this configuration
* Memory size
* Processor speed
* Input/output requirements
* Average and peak user load
* Network requirements
* Storage (disk) requirements
* Physical location (including physical security)
* Environments supported
* Operating system and version

### Input / Output Devices

Describe devices that the Solution must support for user input/output, including monitors, desktops, printers, scanners, etc. Indicate the number of each unique device required. Also indicate the location(s) of these devices. For standard, non-customized devices, reference vendor specifications; further technical details are not required.

### Other Devices

Describe other devices to be supported by the Solution, such as localized networks, communication devices, etc., including the number and location(s) of these devices.

### Infrastructure/Application Diagram

Include a diagram that shows the servers, network connections and other infrastructure components for the Solution, indicating the location and environment supported for each component. Standard desktop computers, office printers and network devices need not be shown.

### Middleware Hosting

Indicate the middleware (database, development and code management tools, and other supporting software) required and show which server hosts each piece of middleware. Version number and other identification information for vendor products should be included.

Requirements for desktop computers should be included if these are critical or “non-standard” (e.g., a specific version of Internet Explorer).

## Interfaces with Other Hardware and External Integration Points

Describe any electronic or mechanical interfaces to non-IT hardware, such as manufacturing or packaging equipment.

## Physical Layout

Include drawings, diagrams, photograph, and other information to describe the physical layout of the Solution’s hardware; this is usually only required for manufacturing and packaging facilities.

## Additional Information

Include any additional information needed to fully specify the hardware and infrastructure architecture of the Solution.

# Configuration Specification

 Do not duplicate excessive information from the functional specification.

When applicable, the configuration specification should be a technical design detail that records configuration values. Any operational description should be limited to clarification or refinement of info presented within the design specification. Diagrams of components may be used to illustrate relationships. Include any configuration information required to properly setup the Solution for use.

This may include but is not limited to the following:

* Required operating system configuration, for example, regional settings and date format.
* Required software module setup parameters
* Configuration parameters for any associated utility programs, for example, report tools, data mapping/transfer tools.
* Logical security parameters
* Physical security requirements as applicable
* Non-default configuration values of the infrastructure
* Report parameters and format
* Alarm parameters
* Non-default screen configuration
* Configured database queries
* Hardware components configuration, for example, printers, scanners, etc. (if not covered in other documents)
* Network and port configuration parameters, for example, server names, domains, DNS server (if not covered in other documents)
* Client configuration parameters
* Backup/archive configuration
* Utility configuration, for example, dedicated UPS setup
* The information should be divided into logical sub-sections for clarity.
* Security Configuration

# Solution Design Specification

When applicable, describe the design of the Solution with respect to the software. Multi-site/distributed Solutions may include information for the entire Solution in a single document, or may produce one document for each site.

This specification should be written with sufficient detail that would allow someone unfamiliar with the project to understand how the Solution/platform accomplishes its goals, without looking at code.

The following headings are a suggested organization of the document, and some sections apply only to systems, not platforms. References to published vendor documents may be included.

## Software Description

Describe the modules that will form the Solution, briefly stating the purpose of each. A list of all the interfaces between modules and any interfaces to external Solutions should be given. Inclusion of a Solution diagram is recommended.

## Coding Standards

When applicable, utilize this section to document your approach and reference to coding standards to be followed for the project. This holds the Technical Unit approver accountable to standards during design

## Solution Data, Information View, and Data Requirements

Describe and identify the Solution data and the major data objects should be defined. The following objects should be considered:

* Databases and collections of data
* Files
* Records
* Data Types
	+ Integers
	+ Floating point numbers
	+ Characters
	+ Boolean
	+ String
	+ Object
* Data Format
	+ Alpha-numeric or numeric
	+ Field length
	+ Date
* Data Precision
* Data Accuracy

Include Information Architecture Artifacts or reference separate IA Artifact documentation which includes, but not limited to, conceptual & logical models, data flow diagrams, data entity traceability matrices and data dictionaries. IA Artifacts should be documented here to fully understand the requirements and provide architectural insight and direction for the solution.

This section provides the architect with a view of the impacted information subject areas impacted by and/or involved in this solution. Information models should be documented here to fully understand the requirements and also to provide architectural insight and direction for the solution. Before each view, provide a textual description on what is included in the view and why, to provide the correct context for readers. Also highlight any areas of the model that have high architectural significance.

Developing a conceptual view using a Conceptual Data Model of information associated with the business process surfaces hidden requirements, establishes a common business language, and improves business domain/IT collaboration.An Entity is something the business cares about storing data about, it can be a person, place, thing, or concept. For example if there is a paper form used to fill out information it is possible that is an Entity (i.e. a Registration Form). The business is gathering information it wants to store or do something with. Entities are defined in a Data Dictionary that minimally contains an Entity Name and a meaningful description stating what it is from a business perspective.

List data requirements or reference data dictionary.

## Module Description

For each module listed in the Software Description section, identify and describe the following:

* Module operation – The description may take the form of pseudo code or a flow chart
* Interfaces to other modules – These may refer to the Solution diagram, if one is produced
* Error handling and data checking
* Data mapping to each module
* Software module data

For each sub-program in the software module, the following information should be considered:

* Sub-program operation - The description may take the form of pseudo code
* The steps involved in each process to be performed
* The inputs to and outputs from each sub-program step
* Parameters
	+ Each parameter should be identified as one of the following:
		- Input Parameter
		- Output Parameter
		- Input and Output Parameter
	+ Each parameter should also be identified as:
		- Pass by value
		- Pass by reference
* Algorithms
* Any side-effects of the sub-program
* Language, including version
* Reference to any programming standards
* Description or examples of all display screens
* Sub-program data
* Description of all implemented reports, including the following:
	+ Examples
	+ Meaning and handling
	+ When they are generated

# Roles and Responsibilities

The *IT Solution Delivery Lifecycle* Procedure, describes the Roles and Responsibilities for developing, verifying, and implementing a Solution. Additional responsibilities relevant to this document are:

Add rows as necessary. If there are no document specific roles, delete the Table and change the second sentence above to:

“There are no additional roles specific to this document.”

| **Role** | **Responsibilities** |
| --- | --- |
|  |  |

# Terms and Definitions

The IT Glossary of Terms maintains the common terms in this document. Also identify any system or solution specific glossaries. Additional terms and definitions specific to this document are included below:

Include terms and acronyms. Add rows as necessary. If there are no document specific terms, delete the Table and change the second sentence above to:

“There are no additional terms and definitions specific to this document.”

| **Term or Acronym** | **Definition** |
| --- | --- |
|  |  |

# Supporting References

Include supporting references explicitly mentioned in this document, excluding glossaries identified in Section 5. Add rows as necessary. If there are no supporting references, delete the Table and add the following text:

“There are no supporting references specific to this document”

| **Identifier** | **Title** |
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# Revision History

Update this table each time this document is revised. Where possible, include a Change Number or Project related to the document change. Entries should provide the reader with only an indication of what changed. Include section where a change took place. Add rows as necessary.

| **Version** | **Version Date** | **Revisions** |
| --- | --- | --- |
| 1.0 |  | Enter “Initial Release” or, if this document is replacing a previous document(s) as a release 1.0 of a new document, identify the predecessor documents. |

# Appendix X: Name of Appendix

Enter any supporting information best suited for an appendix. If there is no need for an appendix, remove this header and the page break before it. If there is only one appendix, recommend changing “Appendix X:” to “Appendix:”