

The Engineering Services Project CSU & SBC DataComm Consulting Services

Presented by

Mark Smith – Chief Technologist

ms6926@sbc.com 925 251 2260

Kamyar Ghazimorad – Chief Architect

kg9834@sbc.com 714 624 2207



Agenda

- Review of Engineering Services (ES) SOW Scope
- ES Project Plan
- ES Deliverables
- Design Parameters
- Template Approach to Configuration Files
- Major Design Attributes – Default & Custom
- Sample Deliverables – Sonoma State University
- Q&A



Engineering Services Scope of Work – Phase 1

- Design and Document:
 - Review information provided in the completed Appendix A – Campus Site Survey
 - Compare requirements specific to the Campus with the Baseline Campus Network Standards and identify additional requirements which are outside the Baseline Campus Network Standards
 - Create a Detailed Design specific to the Campus incorporating all requirements identified



Engineering Services Scope of Work – Phase 1

- Design and Document (contd):
 - Finalize the preliminary BOM identifying Equipment and Services:
 - Covered by the ITRP Baseline
 - Not covered by the ITRP Baseline but covered under the MEA
 - Not covered by either the ITRP Baseline or the MEA
 - Create an Implementation, Integration, and Migration Plan
 - Create a Test and Acceptance Plan



Engineering Services Scope of Work – Phase 2

- **Oversee and Participate**
 - Oversee the activities detailed in the Campus Equipment and Services SOW
 - Participate in resolving any issues that arise during staging, installation testing and integration
 - Insure consistency between what was designed and what is actually implemented



ES – Phase 1 Project Plan - Overview

ID	Task Name
1	Project Documentation
7	Kick-Off Meeting Preparation
10	Internal Kick-Off Meeting
11	External Kick-Off Meeting
12	Review Site-Specific Requirement
17	Freeze Campus Requirements Definition
18	Addressing & Protocol Design
40	Freeze Addressing & Protocol Design
41	Installation & Migration
45	Freeze Implementation & Migration Plan
46	Test & Acceptance
50	Freeze T&A Plan
51	Generate device configurations
52	Generate Detailed Documentation Plan
53	Deliverables
59	Receive customer sign-off

“Freeze” points – designed to keep the project on track

Mutually agreed points during the project at which progress is reviewed and specific items are marked as complete.

Any subsequent changes to “frozen” items will require a change order process, and may affect the overall Project timelines.



ES Deliverables – Detailed Design Documentation

- Physical network design documentation:
 - Network diagram
 - Network redundancy
 - Physical connectivity to existing network
 - Post-design ITRP hardware inventory documenting device location, type, number of ports and type of ports



ES Deliverables – Detailed Design Documentation

- Logical network design documentation:
 - Addressing scheme(s)
 - Supported Protocol(s)
 - Routing protocol(s)
 - Bridging group(s)
 - Virtual Local Area Network (VLAN) architecture



ES Deliverables – Detailed Design Documentation

- Design Guide

- Security requirements
- Redundancy requirements and design
- Logical connectivity within the Local Area Network (LAN) environment
- Implementation of any required equipment software advanced features
- Connectivity to the gateway
- Configuration of each device



ES Deliverables – IIM Plan

- Implementation, Integration, and Migration Plan
 - Guidelines developed and documented by the Consulting Engineers with input from the Implementation Engineers and the Campus.
 - Describe how the design shall be implemented outlining specific steps and procedures.
 - Define how the new equipment and IOS running on the newly designed infrastructure shall integrate with the existing network through the use of a gateway.
 - Describe how devices will be migrated from the existing network to the newly designed infrastructure.



ES Deliverables – Test & Acceptance Plan

- Incorporates the requirements outlined in the Baseline Campus Network Standards.
- Campus-specific criteria will be identified and documented.



#1 – Project Documentation

- Signed Engineering Services SOW
- Completed Appendix A
- Project Contacts with Roles & Responsibilities
- Template Project Documentation



Appendix A

- Developed by CSU Campus with support from SBC Account Team
- Details
 - current campus geography
 - device inventory
 - high-level device configuration
- Used during ES as authoritative document on the existing infrastructure
- Sample [Appendix A](#)



#11 Kick-Off Meeting

- Will receive “Engineering Services Project Preparation Document”. Contains similar information to this presentation.
- Objectives
 - Familiarize everyone with the project scope and plan of execution
 - Agree overall project timelines and freeze point dates
 - Identify critical path dependencies
 - Identify campus-specific requirements not met by generic plan




Kick-Off Meeting Preparation

- Consider the following questions
 - Is the appendix A information complete and accurate?
 - What is your implementation timeline for this project?
 - At a per-closet level, what is the timeline for implementation, integration, and migration of the ITRP infrastructure?
 - Will you provide VLAN, IP unicast, IP multicast , and other protocol, addressing schemes, or do you require SBC to do this?
 - What areas are not addressed in the current SOW or generic documentation?



#12 Review site-specific requirements

ID		Task Name
12		Review Site-Specific Requirement
13		Check against CSU Baseline Standards Document
14		Identify potential technical/contractual Issues
15		Establish and lock-down timelines
16		Confirm and Agree Campus Requirements & Deliverable Expectations
17		Freeze Campus Requirements Definition

- Populate [“Device And Protocol Information”](#) spreadsheet
- Begin “whiteboard” discussions




Device and Protocol Information Worksheet

- New & Existing Asset Inventory
- Identifies all protocols to be configured
- Details physical connections between network devices
- Identifies II&M (Implementation, Integration, and Migration) requirements on a per closet, per device basis



#18 Addressing & Protocol Design

ID		Task Name
18		Addressing & Protocol Design
19		IP Tasks
22		Freeze IP Addressing
23		IPX Tasks
26		Freeze IPX addressing
27		AppleTalk Tasks
30		Freeze AT Addressing
31		DecNet Addressing Tasks
34		Freeze DN Addressing
35		VLAN Tasks
38		Freeze VLAN Addressing
39		Generate per closet addressing documentation
40		Freeze Addressing & Protocol Design

- Populate [Device Configuration Template Spreadsheets](#)



SBC Datacomm Cisco Configuration Utility

Configuration data imported from excel spreadsheet

3 configuration files created by the utility

The screenshot shows the Cisco Configuration File Utility interface. On the left, a 'Dockable Window' displays a table of configuration data imported from an Excel spreadsheet. The table has columns for DeviceName, Variable, and Type. On the right, three windows show the generated Cisco configuration files for different devices: dar01-c40a, dar01-c40b, and dar01-c40c. Arrows indicate the flow of data from the table to the configuration files.

DeviceName	Variable	Type
dar01-c40a	System_Location	G
dar01-c40b	System_Location	G
dar01-c40c	System_Location	G
dar01-c40a	System_Contact	G
dar01-c40b	System_Contact	G
dar01-c40c	System_Contact	G
dar01-c40a	System_Name	G
dar01-c40b	System_Name	G
dar01-c40c	System_Name	G
dar01-c40a	System_Prompt	G
dar01-c40b	System_Prompt	G
dar01-c40c	System_Prompt	G
dar01-c40a	MOTD_Banner	G
dar01-c40b	MOTD_Banner	G
dar01-c40c	MOTD_Banner	G
dar01-c40a	Syslog_Server_IP_Address	G
dar01-c40b	Syslog_Server_IP_Address	G
dar01-c40c	Syslog_Server_IP_Address	G
dar01-c40a	Logging_Server_Severity_Le	G
dar01-c40b	Logging_Server_Severity_Le	G
dar01-c40c	Logging_Server_Severity_Le	G
dar01-c40a	Logging_Buffer_Size	G
dar01-c40b	Logging_Buffer_Size	G
dar01-c40c	Logging_Buffer_Size	G
dar01-c40a	Logging_History_Table_Size	G
dar01-c40b	Logging_History_Table_Size	G
dar01-c40c	Logging_History_Table_Size	G
dar01-c40a	Logging_Facility_Type	M
dar01-c40b	Logging_Facility_Type	M




SBC Datacomm Cisco Configuration Utility

- The config Tool Is a windows Application
- It manipulates template configuration files
- Using Device Configuration template Spreadsheets




41 – Installation, Integration & Migration Plan

ID		Task Name
41		Installation, Integration & Migration
42		Identify requested installation/migration strategies on a per-closet
43		Evaluate impact on closet size, power, A/C, and proposed add
44		Agree Implementation & Migration Plan
45		Freeze Implementation & Migration Plan

- Populate [Installation, Integration, & Migration Plans](#)



#46 – Test & Acceptance Plan

ID		Task Name
46		Test & Acceptance
47		Ensure standard T&A addresses all campus requirement
48		Request any additions from campus/PlanNet
49		Agree T&A Plan
50		Freeze T&A Plan

- Complete [Test & Acceptance Plan](#) Document



Samples Deliverables - SSU

- Detailed Design Documentation
 - Physical Diagram
 - Logical Diagram(s)
 - Design Guide
- Implementation, Integration, & Migration Plan
- Test & Acceptance Plan
- Device Configuration Documentation
 - 29xx Template
 - 40xx Template
 - 65xx Configuration Files



Summary

- Use the checklist in the “Engineering Services Project Preparation Document” to make sure that you’re ready for the ES Kick-Off meeting
- Work with the configuration templates to identify any changes you requires from the generic configuration files
- Determine your project timeline and freeze point dates for the ES project



Q&A

