

Instructor Guide Example

Overview

The Instructor Guide (IG) is often the final deliverable you will develop in your ISD efforts. It is the packaging of all the deliverables you already created (demonstrations, practices, assessments, content delivery/presentations, etc), put together the order you designed in your lesson blueprints so an instructor can facilitate the delivery of a lesson in the same manner each time it is taught.

Purpose

The purpose of these instructor guide example is to highlight some of the features and options, listed below, that can be developed using the IG Template.

The intent of the IG Template is to assist in your development of performance-based instruction; however it is NOT intended to be followed as direct cut-and-paste for every lesson you write, you should use this template to develop your lessons based on the design decisions made previously (captured on your lesson blueprint).

Features and Options

Some of the features and options you will see in this example, for how the IG Template can be tailored to meet your design decisions include:

- Development of a Preview/Pre-requisite “knowledge-based” lesson (not performance based, with no PT).
 - Multiple “Demonstration-Practice”, “Demonstration-Practice” deliveries before the student would be assessed due to complexity of task or integrated PT (determined in design phase).
 - Referencing the source of Content (knowledge) from which lecture is delivered, but not cut-and-paste into Instructor Guide (reducing redundancy)
 - Appendices can be used for whatever purpose the customer or developer determines works with design.
-

Instructor Guide Example, Continued

NOTE!

DO NOT get hung up on the content or numbers in this example, this Instructor Guide is NOT a reflection of the product used in IT-A school. This example is for TRAINING PURPOSES ONLY.

This example also is NOT typical of the complete instructional support package that a developer should compile and provide to instructors; there are no associated practice exercises, Performance Test Checklists, Job Aids, homework assignments, Student Guide or Power Points that may be associated with a given lesson. This example is ONLY highlighting the use of the IG Template.

U.S. Department of
Homeland Security

United States
Coast Guard



Instructor Guide

Unit 6: Telephone Systems



IT-A School

MARCH 2012

About This Course

Source

This course has been created based on the following key sources of information:

Source:	Provides:
IT EPQ Form CG-3303C-IT dated 03-2009 Task Analysis, 2010	Performance Objectives (PO)
Curriculum Outline (<i>draft</i>) dtd April 2012	Additional information for course administration such as: <ul style="list-style-type: none"> • Max # students/course • Location • Delivery (resident / exportable) • Equipment / Resource needs • Instructor contact hours *See below for some of this information.

Instructional Settings

This course will be delivered in various settings depending on the tools and equipment needed for each lesson. You need to check and reserve the settings in advance; specific labs or classrooms will be spelled out in each of the lessons as required.

Class Size

14 students are the maximum for this class.

Location

This course is delivered at Training Center Petaluma, IT School.

About This Course, Continued

Course Length This course requires 153 training days – Telephone Systems, Unit 6, requires approximately 27 training days. The approximate allocation of times is listed at the beginning of each lesson.

Security Classification No clearance is required; information has been tailored when necessary for training purposes only.

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COURSE OVERVIEW

Introduction

Overview

This Instructor Guide is designed for you, the instructor(s), to assist in your delivery of the various units of instruction throughout IT-A school in order to graduate confident and competent apprentice Information Systems Technicians (IT). The only parts of the curriculum that will not be found within the IG are those lessons that follow the certification programs for A+ and Net+ modules.

Course Contents

This course consists of the following units:

- Unit 1. A+ (*Additional lessons on Sys Admin support tasks*)
 - Unit 2. Fundamentals
 - Unit 3. Premise
 - Unit 4. Fiber
 - Unit 5. Net + (*Additional lessons on Telephone Systems & Sys Admin Support tasks*)
 - **Unit 6. Telephone Systems**
 - Unit 7. System Administration
 - Unit 8. Capstone
-

Performance Evaluations

You will evaluate students on the performance of each task delivered throughout this course. How that performance test will be scheduled, administered, and evaluated is detailed within each lesson and/or in the Performance Test Checklist (PTC) booklet.

Safety

Specific safety concerns, as necessary will be spelled out within those lessons to which it will apply. Personnel who operate or maintain equipment during the training must be thoroughly familiar with all aspects of personnel safety, and strictly adhere to every general as well as specific safety precautions contained in operating and emergency procedures, and in applicable governing directives.

Applicability: The safety precautions contained in this course are applicable to all personnel. They are basic and general in nature.

Introduction, Continued

Situational Awareness

You are responsible for maintaining situational awareness and shall remain alert to signs of student panic, fear, extreme fatigue, or exhaustion, or lack of confidence that may impair safe completion of the training session, and shall immediately stop the training, identify the problem, and make a determination to continue or discontinue the training.

Course Map

Illustration The image below illustrates a high-level grouping and sequencing for this course:

5 days <i>ALDP</i>	25 days <i>A+</i>	22 days <i>Fundamentals*</i> 4 <i>IPOs</i>	21 days <i>PREMISE</i> 43 <i>IPOs</i>	9 days <i>Fiber</i> 5 <i>IPOs</i>	20 days <i>Net +</i>	27 days <i>Telephone Systems</i> 49 <i>IPOs</i>	26 days <i>System Admin</i> 28 <i>IPOs</i>	3 days <i>Capstone</i> <i>Review of all IPOs</i>	
	System Admin Support Tasks	Safety - Extinguish a Fire, Rescue an electric shock victim, test high voltage gloves, CPR. 4 <i>IPOs</i> (<i>ET "A"</i>)	Safety Review	Safety Review		Telephone Systems & System Administration Support Tasks	Safety Review	Safety Review	Safety Review
		Documentation – practiced in all PT's (not tested)	Documentation – practiced in all PT's (not tested)		Documentation – Tested in PT				
		CGFIXIT – practiced in all PT's (not tested)	CGFIXIT – practiced in all PT's (not tested)		1 <i>IPO</i>		CGFIXIT – practiced in all PT's (not tested)	CGFIXIT – Tested in PTs	
IPO TOTAL	14 IPOs	8 IPOs	43 IPOs	5 IPO	8 IPOs	50 IPOs	42 IPOs		

UNIT 6. TELEPHONE SYSTEMS

Introduction

Overview

This unit consists of the following lessons, which are further described below:

- Lesson 1. Introduction to Telephone Systems
- Lesson 2. Communicating and Programming
- Lesson 3. Backing up a Telephone System
- Lesson 4. Analog Telephones
- Lesson 5. Digital Telephones
- Lesson 6. Voice Over Internet Protocol (VoIP) Phones
- Lesson 7. Moves, Adds, and Changes (MACs)
- Lesson 8. Troubleshooting Analog, Digital, and VoIP Phones
- Lesson 9. Analog Trunking
- Lesson 10. Digital Trunking
- Lesson 11. Troubleshooting Analog and Digital Trunks
- Lesson 12. Public Address Systems
- Lesson 13. Voice Mail
- Lesson 14. Auto Attendant
- Lesson 15. Disaster Recovery
- Lesson 16. Classroom Reset

Lesson 1. Introduction to Telephone Systems

Skills and knowledge obtained upon completion of this preview lesson include the following:

- Avaya CS1000E Familiarization
- Avaya CS1000E PBX circuit card locations

Lesson 2. Communicating and Programming

Skills and knowledge obtained upon completion of this preview lesson include the following:

- Communicating with the CS1000E PBX
 - Navigating electronic documentation
-

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Lesson 3.**Backing up a Phone System**

Upon successful completion of this lesson, the students will be able to **BACK-UP** the CS1000E PBX customer data.

**Lesson 4.
Analog Phones**

Upon successful completion of this lesson, the students will be able to **PERFORM** an ADD for an Analog phone.

**Lesson 5.
Digital Phones**

Upon successful completion of this lesson, the students will be able to **PERFORM** an ADD for a Digital phone.

**Lesson 6.
VOIP Phones**

Upon successful completion of this lesson, the students will be able to do the following:

- **PERFORM** an ADD for a VoIP phone
 - **PERFORM** a set level configuration of an IP phone
-

**Lesson 7.
MACs**

Upon successful completion of this lesson, the students will be able to do the following:

- **PERFORM** a MOVE (hardware) for a phone
 - **PERFORM** a MOVE (software) for a phone
 - **PERFORM** a CHANGE (software) for a phone
 - **PERFORM** a CHANGE (software) for a VoIP phone
-

**Lesson 8.
Troubleshooting Phones**

Upon successful completion of this lesson, the students will be able to do the following:

- **TROUBLESHOOT** an analog phone with a hardware fault
- **TROUBLESHOOT** an analog phone with a software fault
- **TROUBLESHOOT** an analog phone with incorrectly programmed features
- **TROUBLESHOOT** an digital phone with a hardware fault
- **TROUBLESHOOT** an digital phone with a software fault
- **TROUBLESHOOT** an digital phone with incorrectly programmed features
- **TROUBLESHOOT** an VoIP phone with a hardware fault

Continued on the next page

Introduction, Continued

Lesson 8. Troubleshooting Phones, Continued

- **TROUBLESHOOT** an VoIP phone with a software fault
 - **TROUBLESHOOT** an VoIP phone with incorrectly programmed features
-

Lesson 9. Analog Trunking

Upon successful completion of this lesson, the students will be able to do the following:

- **INSTALL** a loop start telephone trunking service
 - **INSTALL** a ground start telephone trunking service
 - **INSTALL** a DID analog telephone trunking service
 - **INSTALL** a E & M analog telephone trunking service
-

Lesson 10. Digital Trunking

Upon successful completion of this lesson, the students will be able to do the following:

- **INSTALL** a T-1 (DS1) telephone trunking service
 - **INSTALL** an ISDN PRI telephone trunking service
 - **TROUBLESHOOT** Network Systems with a Loopback test
 - **DOCUMENT** installed data and/or voice systems
-

Lesson 11. Troubleshooting Trunks

Upon successful completion of this lesson, the students will be able to do the following:

- **TROUBLESHOOT** a phone with misconfigured levels of access
- **TROUBLESHOOT** a LOOP START analog telephone trunking service with a hardware fault
- **TROUBLESHOOT** a LOOP START analog telephone trunking service with a software fault
- **TROUBLESHOOT** a LOOP START analog telephone trunking service with misconfigured levels of access
- **TROUBLESHOOT** a GROUND START analog telephone trunking service with a hardware fault
- **TROUBLESHOOT** a GROUND START analog telephone trunking service with a software fault
- **TROUBLESHOOT** a GROUND START analog telephone trunking service with misconfigured levels of access

Continued on next page

Introduction, Continued

Lesson 11. Troubleshooting Trunks, Continued

- **TROUBLESHOOT** a DID analog telephone trunking service with a hardware fault
- **TROUBLESHOOT** a DID analog telephone trunking service with a software fault
- **TROUBLESHOOT** a E&M analog telephone trunking service with a hardware fault
- **TROUBLESHOOT** a E&M analog telephone trunking service with a software fault
- **TROUBLESHOOT** a E&M analog telephone trunking service with misconfigured levels of access
- **TROUBLESHOOT** a T-1 (DS1) telephone trunking service with a hardware fault
- **TROUBLESHOOT** a T-1 (DS1) telephone trunking service with a software fault
- **TROUBLESHOOT** a T-1 (DS1) telephone trunking service with misconfigured levels of access
- **TROUBLESHOOT** an INTEGRATED SERVICES DIGITAL NETWORK (ISDN) PRI telephone trunking service with a software fault
- **TROUBLESHOOT** an INTEGRATED SERVICES DIGITAL NETWORK (ISDN) PRI telephone trunking service with incorrectly programmed network capabilities

Lesson 12. Public Address Systems

Upon successful completion of this lesson, the students will be able to do the following:

- **INSPECT** Public Address system components
- **TROUBLESHOOT** Public Address System components

Lesson 13. Voice Mail

Upon successful completion of this lesson, the students will be able to do the following:

- **ADD** a voice mail box for a user to a phone system
 - **PERFORM** a CHANGE for a user's voice mail box
 - **DELETE** a voice mail box for a user to a phone system
 - **BACKUP** a voice mail system
-

Introduction, Continued

Lesson 14. Auto Attendant

Upon successful completion of this lesson, the students will be able to do the following:

- **ADD** a menu item to the Auto Attendant service
 - **CHANGE** a menu item on an auto attendant service
-

Lesson 15. Disaster Recovery

Upon successful completion of this lesson, the students will be able to do the following:

- **PERFORM** booth reset
 - **PERFORM** disaster recovery by re-building a phone switch to include the following:
 - **PERFORM** an ADD for an Analog phone
 - **PERFORM** an ADD for an Digital phone
 - **PERFORM** a MOVE (hardware) for a phone
 - **PERFORM** a MOVE (software) for a phone
 - **PERFORM** a CHANGE (software) for a phone
 - **PERFORM** an ADD for a VoIP phone
 - **PERFORM** a set level configuration of an IP phone
 - **PERFORM** a CHANGE (software) for a VoIP phone
 - **PERFORM** a loop start telephone trunking service
 - **PERFORM** a ground start telephone trunking service
 - **PERFORM** a DID analog telephone trunking service
 - **PERFORM** a E & M analog telephone trunking service
 - **INSTALL** a T-1 (DS1) telephone trunking service
 - **INSTALL** an ISDN PRI telephone trunking service
-

Lesson 16. Classroom Reset

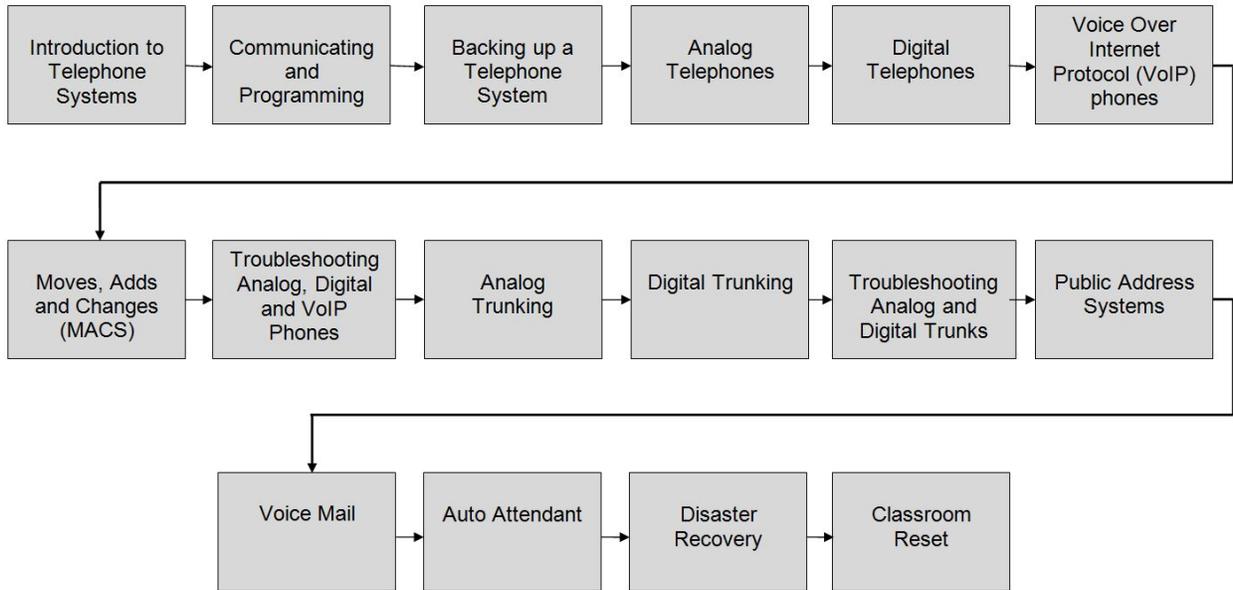
Skills and knowledge obtained upon completion of this final lesson include the following:

- **PERFORM** final booth reset to factory settings
 - **PERFORM** tool bag inventory
 - **COMPLETE** level 1 class critiques
-

Introduction, Continued

Unit Map

The image below illustrates a high-level grouping and sequencing for this unit:



Lesson 1. Introduction to Telephone Systems

Introduction

Overview In this lesson you will cover a brief overview of the telephone systems unit and become familiarized with the Avaya CS 1000E.

Objective Skills and knowledge obtained upon completion of this preview lesson include:

- Avaya CS 1000E Familiarization
- Avaya CS 1000E PBX circuit card descriptions and locations

References The following are references for this lesson when the detail information is desired:

- Avaya CS1000E Circuit Card Reference Guide
- Avaya CS1000E Planning and Engineering Manual
- Avaya CS1000E Installation and Commissioning Manual

Instructional Settings The lesson will be delivered in the following settings:

- Telephone Systems Classroom / General Classroom setting
- Telephone Systems Lab

Materials You need the following materials to support delivery of this lesson:

For the Instructor:

- CD of Avaya CS 1000E manuals
- Computer
- Overhead Projector
- Performance Test Booklet
- *Avaya_CS1000E.ppt*

Continued on next page

Introduction, Continued

Materials, Continued

For the Students:

- Computer
- CD of Avaya CS1000E manuals
- Student guide
- Performance Test Booklet
- Tool Bag

Time and Staffing Delivery Requirements

The following are suggested times and staffing requirements for the various activities of this lesson. Minor adjustments are allowable.

Activity	Time Estimate	I:S Ratio	Description / Notes
Lecture 1	30 minutes	1:16	Overview
Tool Inventory	20 minutes	1:16	Instructor will have students inventory their tool kits
Lecture 2	2 hours and 30 minutes	1:16	Avaya CS 1000E Familiarization <i>Avaya_CS1000E.ppt</i>
Guided Practice	30 minutes	1:16	Students will view circuit cards in assigned booths & document card locations
Total training time:	3 hours, 50 minutes		

Unit Overview

Introduction This topic is designed to provide an overview of unit objectives and to provide a high level explanation of the versatility of the CS1000E Call Server. Additionally, student tool bag inventories will be conducted in order to familiarize students with tools necessary for telephony systems maintenance and repair.

Opening Activity We've come a long way from the cans on end of a string, to central switch panels that you called into to be patched to your caller destination, to long-corded telephones, to portable, to wireless...what do we need to do to maintain these new telephone systems...well you will be learning those skills and familiarizing yourself with the telephone systems that are being used at units throughout the Coast Guard.

How many of you have had any experience working on telephone systems, and what did you do?

Allow for some general discussion just to kick off the class and get them ready to learn! Instructors may want to come up with their own kick-off exercise, if so limit opening activity to no more than 10 minutes.

- Lecture 1**
1. Unit objectives:
 - Referencing the performance test booklet as a guide, refer students to the Table of Contents and discuss the objectives that will be completed throughout this unit.
 2. CS1000E Call Server - Give a brief overview of topics covered in Unit:
 - Avaya CS1000E
 - Avaya CS1000E manuals on CD
 - Backing up customer data
 - Analog, Digital and VoIP phones
 - Trunks
 - PA Systems
 - Troubleshooting
 - Call Pilot
 3. Disaster Recovery - Discuss what the students will be expected to accomplish on the final day of class after a phone switch crash with no backups.
 - See Lesson 15a, Lecture 1 for more information on the disaster recovery exercise.
-

1a. Tool Bag Inventory

Student Exercise

Have each student verify their tool bag contains the following items:

- Small Flathead screwdriver
 - Small Phillips screwdriver
 - Butt set
 - Mod-Apt
 - Punch tool
 - Pick tool
 - Scissors
 - Multi-meter
 - Testar
-

Testar

Show the students a Testar tool and explain how and when they will be using it for troubleshooting purposes.

- Plugs directly onto the 66 Block
- Provides a 1-2 pair modular jack for plugging in test equipment



1b. Avaya CS 1000E Familiarization

Overview

This topic is designed to provide an overview to the students of the following concepts, which support performance and delivery of tasks:

- Private Branch Exchange
 - Avaya CS1000E
 - Avaya CS1000E Cards
 - Co-Resident and Non-Co Resident Architectures
 - Circuit Card Safe Handling Procedures
 - Layout of the CPPM card, FMD (Fixed Media Drive) and RMD (Removable Media Drive)
 - Work Orders
 - Card Location exercise
 - Software Location
-

Lecture 2

Refer to the Avaya CS1000E manuals for more information on each of the following lecture points; see notes in the PowerPoint (*Avaya_CS1000E.ppt*) for supplemental talking points for the instructor.

1. Private Branch Exchange
 - Discuss the duties of a Private Branch Exchange (PBX)
 - Give examples of Coast Guard PBXs (Avaya CS1000E, Avaya CM6, Nortel NorStar, EON Millennium)
 - Discuss how the PBX integrates into a Central Office (CO)
 - Discuss how multiple PBXs and COs make the Public Switched Telephone Network (PSTN)
2. Avaya CS1000E
 - Discuss key features of the CS1000E
3. Avaya CS1000E System cards
 - Explain how to properly handle the circuit cards in order to prevent damage to the cards.
 - Discuss the Common Processor Pentium Mobile card (CPPM) and how it relates to the CS1000E.

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1b. Avaya CS1000E Familiarization, Continued

Lecture 2, Continued

- Discuss the Media Gateway Card (MGC) and how it relates to the CS1000E.
 - Discuss the Common Processor Media Gateway card (CPMG) and how it relates to the CS1000E.
 - Have students go to their assigned booths and look at each of these cards in operation.
 - Each desk has a corresponding booth assigned to it.
4. Avaya CS1000E peripheral equipment (Cards)
- Discuss the following peripheral cards and how they each relate to the CS1000E.
 - Analog line card
 - Digital line card
 - Universal trunk card
 - E&M trunk card
 - TMDI DTI/PRI card
 - Have students go to their assigned booths and look at each of these cards in operation.
5. Co-Resident and Non-Co Resident Architectures
- Discuss the CS1000E parameters of the Co-Resident Architecture.
 - Linux Base Operating System (OS)
 - Unified Communications Manager (UCM)
 - Element Manager (EM)
 - Call Server (CS)
 - Signaling Server (SS)
 - Network Routing Server (NRS)
 - Explain the CS1000E parameters of the Non-Co Resident Architectures
 - Unified Communications Manager (UCM)
 - Element Manager (EM)
 - SS
 - Network Routing Server (NRS)

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1b. Avaya CS1000E Familiarization, Continued

Lecture 2, Continued

6. CPPM card, Fixed Media Drive (FMD) and Removable Media Drive (RMD).
 - Discuss the layout of the CPPM card, Fixed Media Drive (FMD) and Removable Media Drive (RMD)
 7. Work Orders
 - Discuss the contents of the Work Order section of Student Guide
 - Work Orders
 - Work Sheets
 - Run Sheets
 - Reference Materials
 - Card location work sheet
 8. Software location:
 - Discuss location of backup files
 - Fixed Media Drive (FMD)
 - RMD (contains the only true backup copy)
 - USB (overrides RMD when both installed)
-

Guided Practice: Card Location Exercise

Exercise

Card location exercise – *See Student Guide, pg 6-4.*

Direct students to go to their booths and fill out card location work sheet found in the Student Guide. This is a guided practice, so if questions arise, or students need help, answer questions in order to guide them through this exercise.

This practice can be completed before the last part of the lecture is done or once complete; instructors should refer to the *.ppt* and see which delivery works best for them.

Objective: Students shall document the cards (System/Peripheral) found in each of the 10 slots of the Avaya CS 1000E PBX.

Time: Approx 15-30 minutes

Summary and Review

Review

Allow students an opportunity to review the topics just discussed by completing the Teach-to-Learn exercise, found in their Student Guide (Appendix A.1) as a way to enhance retention and transfer of the concepts/knowledge just learned. They will have 30 minutes to complete this exercise within their teams. Major concepts to be reinforced through this review in order to apply to follow-on lessons include:

- Avaya CS 1000E Familiarization
 - Avaya CS1000E card descriptions and locations
-

Group Discussion (Q&A)

Allow students adequate time to discuss all the issues in this lesson. Instructors may write down the questions and answers below (identified by the students or other instructors) in order to assist you in preparation for future delivery of this lesson.

Questions	Answers

Lesson 3. Backing up a Telephone System

Introduction

Overview

In this lesson you will cover the following:

- 3a. How to backup the CS 1000E customer data
 - 3b. How to restore the CS 1000E customer data
-

Objective

In this lesson you will cover the following:

Given a scheduled unit back-up policy, a change in the system, or a work order to back-up the call server and an administrative PC, **BACK-UP** the call server in accordance with manufacturer's technical manuals while following all safety and security procedures set forth in the National Electrical Code, COMDTINST M10550.25B Electronics Manual (Chapter 4), DHS 4300 Information Security Policy Series and CIM 5530.1C Physical Security Manual, as evidenced by successful verification of service confirmed using Command Line and Element Manager programming and completion of unit documentation.

References

The following are references for this lesson when detail information is desired:

- Avaya Software Input/Output Maintenance Manual 711
-

Instructional Settings

The lesson will be delivered in the following settings:

- Telephone Systems Classroom / General Classroom setting
 - Telephone Systems Lab
-

Materials

You need the following materials to support delivery of this lesson:

For the Instructor:

- Computer
- Overhead Projector
- Avaya CS 1000E
- CF card

Continued on next page

Introduction, Continued

Materials, Continued

For the Students:

- Computer
- Student guide
- Avaya CS 1000E
- Performance test booklet
- CF card

Time and Staffing Delivery Requirements

The following are suggested times and staffing requirements for the various activities of this lesson. Minor adjustments are allowable.

Activity	Time Estimate	I:S Ratio	Description / Notes
Lecture 1	20 minutes	1:16	3a. Backing up the CS 1000E customer data
Demonstration	15 minutes	1:8*	Instructor will demonstrate "How to backup the CS 1000E customer data"
Practice 1	15 minutes	1:8*	Student will complete practice activity on above topic
Lecture 2	15 minutes	1:16	3b. Restoring the CS 1000E customer data
Demonstration	20 minutes	1:8*	Instructor will demonstrate: "How to restore the CS 1000E customer data"
Exercise	30 minutes	1:8*	Students will practice restoring CS 1000E <i>*There is NO performance test required for "restore"</i>
Performance Test	1 hour 45 minutes	1:8*	Task: PERFORM back-up for telephone system
Total training time:	3 hours, 40 minutes		

** Minimum of two instructors required regardless of class size*

3a. Back-up the CS 1000E Customer Data

Overview This topic is designed to provide instruction and practice in order for students to become proficient in performing routine backups of the PBX.

Preparation Checklist Instructors should ensure the following is checked before delivery:

- Classroom is set-up, computers operational, projector working, and student and instructional materials checklist verified.
- Telephone Systems lab is set-up; ensure all stations booted prior to lesson so ready for student practice, and practice scenarios posted at each stations (From Unit 6/Lesson3/Practices folder).

Job Aid Instructor and students should have the following job aids readily available to support the performance and delivery of this task:

JA-6.3a: BACK-UP CS 1000E Customer Data Job Aid

JA-6.3b: Restore CS 1000E Customer Data Job Aid

Lecture 1 (Content) Refer to the Avaya CS1000E manuals for more information on each of the following lecture points.

“Backup the CS1000E customer data”

- Discuss how to backup the CS1000E customer data
 - Discuss internal versus external backups
 - Discuss backup media types
 - Compact Flash
 - USB
 - Discuss backup schedule options
 - Lack of official policy
-

3a. Back-up the CS 1000E Customer Data, Continued

Demonstration Have the students follow-along with their job aid (listed above) as the instructor demonstrates the steps to perform a back-up of the CS 1000E customer data. The basic steps that should be explained in more detail as demonstration evolves (referencing Avaya CS1000E manuals) are as follows:

1. Login via PuTTY
2. Go to LD 43
3. Input EDD command
4. Describe data dump output information

Teaching Points: EDD is Equipment Data Dump (from Load 43)

As you make changes to the customer database, the information is stored in the working area of system memory. A Data Dump copies the data from the read-write area of the system memory to permanent storage.

Practice 1: Perform a Backup for a Telephone System

Preparation

To prepare for this practice exercise, ensure the following:

1. Instructor refers to Appendix A for Performance Test assessment instructions; these are the same standards which should be used during practices.
2. Verify student has a Compact Flash card in RMD
3. Verify all stations have access to tools, references and compact flash memory cards. Other materials needed:
 - Avaya Software Input/Output Maintenance Manual 711
4. Ensure a copy of the Practice Scenario is posted at each station (From Unit 6/Lesson3/Practices folder).

Administration

Follow the steps below to administer the practice (which are the same required of the student to complete the performance test, and what is required of them in the field):

1. Direct the students to retrieve their tools and references.
 2. Direct the students to properly perform a back-up while adhering to all safety standards.
 3. Inform the students that they will have 20 minutes to complete the exercise.
 4. Set the timer for 20 minutes.
 5. When the timer goes off, tell the students the practice is done and to stop working.
 6. Use the checklist (in the Performance Test Checklist (PTC) booklet) to evaluate the student work against the standards to which they will be expected to perform to during the final assessment. Use the answer key provided in the next block of text, Evaluation Process.
 7. Give feedback to the students as outlined in Step 1 of the Evaluation Process block of text that follows.
-

Practice 1: Perform a Backup for a Telephone System, Continued

**Instructor
Actions
(Checkout)**

After student has performed an EDD from LD 43 (as previously demonstrated), verify the output looks like the example below. Be aware you may have to scroll up to verify the "CCBR backup complete".

```
CCBR backup Complete!  
100 percent completed
```

```
Backing up reten.bkp
```

```
Starting database backup to local Removable Media Device
```

```
KEYCODE  
DIRECTORY  
CONFIG  
DATA  
HI  
ZONE  
ESET1  
ESET2  
NODE  
SYSCFG  
SMPCONF  
FORWARDLISTFILE  
PENDINGCPMSGLST  
ACCOUNTS  
ERL  
ZBD  
NZON  
ELIN  
SUBNET  
NTP  
MGC  
SYSTEM_PARAMS  
PORT_CUSTOM  
PORT_STATE  
EPTFLAG
```

```
Backing up reten.bkp to "/cf2/backup/single"
```

```
Database backup Complete!
```

```
TEMU207 Backup process to local Removable Media Device  
ended successfully.
```

Practice 1: Perform a Backup for a Telephone System, Continued

Instruction for Evaluation

Follow the instruction below to evaluate the practice:

1. Inform the student of the practice result:

IF	THEN
Go	Inform the student they are ready to proceed to the Performance Test.
No Go	<ol style="list-style-type: none">1) Review the practice with the student.2) Explain the discrepancies.3) Answer any questions.4) Administer another practice until the student succeeds in practice.

2. Return the PTC booklet to the student.
-

3b. How to Restore the CS 1000E Customer Data

Overview This topic is designed to show students how to restore customer data into a PBX for informational purposes only. *There is no performance test associated with this task.*

Lecture 2 Refer to the Avaya CS 1000E manuals for more information on each of the following lecture points.

Restore the CS 1000E customer data

- Discuss how to restore the CS 1000E customer data
 - Discuss restore media types
 - Compact Flash
 - USB
-

Demonstration Using the *JA-6.3b: Restore CS 1000E Customer Data Job Aid*, have students follow along as you demonstrate the steps performed to restore the CS1000E customer data; as follows:

- Login via PuTTY
 - Go to LD 43
 - Input RES RMD command
 - Go to LD 135
 - Input SYSLOAD ACTIVE command
 - Reboot call server
 - Go to LD 43
 - Input EDD command
 - Describe data restore output information
-

Exercise Have students practice restoring backed up data into their assigned PBX.

There is NO EVALUATION of this exercise, because there is no Performance Test. Instructors should ensure students properly restore the backed up data.

Assessment: Perform a Backup for a Telephone System

Preparation

Follow the instruction below to prepare for the performance test:

1. Verify student has a Compact Flash card in RMD
 2. Verify all stations have access to tools, references and compact flash memory cards
 3. Post a copy of the Test Scenario at each station.
 4. Remind students to bring their Performance Test Checklist (PTC) booklet to the assessment.
 5. Review instructions for administration found in the PTC booklet (Instructor version).
-

Administration

Follow the instructions for administration as outlined in the PTC booklet (Instructor version); additionally:

1. Direct the students to retrieve their tools and references.
 2. Give the scenario / printed test to the student.
 3. Allow enough time for student to read the instructions.
 4. Ask if any questions, answer as necessary.
 5. Emphasize the time limit for the test (Set the timer for 20 minutes).
 6. Then, direct the students to properly perform a backup while adhering to safety standards
 7. When timer goes off, tell students the test is done and to stop working.
-

Assessment: Perform a Backup for a Telephone System, Continued

Evaluation Process

Follow the instructions below to evaluate the performance test:

1. Use the PTC booklet to evaluate the student's performance.
2. Inform the student of the test result:

IF	THEN
Go	Sign and date for successful completion of the task on the Course Sign-Off Sheet.
No Go	<ol style="list-style-type: none"> 1) Review the test with the student. 2) Explain the discrepancies. 3) Schedule remediation, as necessary. 4) Schedule the next attempt at PT. <p>Note: <i>If the third attempt is necessary, you must inform the School Chief.</i></p>

3. Return the PTC booklet to the student.
 4. Enter the results into the SKILLS database.
-

Summary and Review

Review

Allow students an opportunity to review the topics discussed In Lessons 1 through 3 by assigning the Homework exercise, using this as a way to enhance retention and transfer of the concepts/knowledge just learned, and prepare them for application of these skills/knowledge as preparation for Lesson 4: Analog Telephones.

Group Discussion (Q&A)

Allow students adequate time to discuss all the issues in this lesson. It may be helpful for you to capture these commonly asked questions / answers below for future lesson delivery or course updates.

Questions	Answers

Homework Assignment

Give each student a copy of the “Telephone Systems Overview” homework questions and assign them a completion due date.

One evening to complete is recommended; let students know this will be reviewed in class before moving into the next lesson. (Answer Key is in Appendix A).

APPENDICES

Appendix A. Homework – Answer Key(s)

HW - Telephone Systems Overview (Lesson 3)

Telephone Systems Overview homework answer key.

Question #	Answer	Question #	Answer
1.	d	19.	c
2.	a	20.	d
3.	a	21.	d
4.	d	22.	b
5.	d	23.	b
6.	b	24.	d
7.	a	25.	c
8.	d	26.	b
9.	a	27.	b
10.	d	28.	d
11.	d	29.	b
12.	b	30.	c
13.	c	31.	b
14.	b	32.	a
15.	d	33.	b
16.	b	34.	a & c
17.	a	35.	b & d
18.	a		

Appendix B. Student Achievement Summary

Purpose The *Student Achievement Summary* is used to record completion of Tasks. Upon completion, this form is used to enter each student’s data into the Skills Database.

Directions

Step	Action
1	Print one copy of <i>Student Achievement Summary</i> (found on following 3 pages) per student.
2	Ensure student’s name and class number are on each page.
3	Evaluators sign, initial, and date the last page.
4	After each task is completed check number of attempts, date and initial task.
5	At the conclusion of the unit, ensure all student achievement summaries are complete.
6	Enter student’s information into Skills Database.

Summary Page

The *Student Achievement Summary* page is found in the back of the students PTC Booklet and kept at end of unit by the instructor as a final record of the student’s achievement. Sample below:

**STUDENT ACHIEVEMENT SUMMARY
PERFORMANCE QUALIFICATION STANDARDS (PQS)**

Unit 6: Telephone Systems Tasks

Student:		Class #:				
PO	TASK	ATTEMPT			DATE	INIT
		1 st	2 nd	3 rd		
E1.4E03.17	PERFORM backup for telephone systems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
E1.4E02.09	PERFORM an ADD for an analog phone	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
E1.4E02.10	PERFORM an ADD for a digital phone	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
D1.4D05.01	PERFORM an ADD for a VOIP Phone	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
D1.4D05.02	PERFORM set level configuration of an IP phone	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
D1.4D05.03 E1.4E02.07/.08/.11	PERFORM MOVES and CHANGES for a phone	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
E1.4E02.17	TROUBLE SHOOT a telephone system with a faulty analog phone	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	TROUBLE SHOOT a telephone system	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

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USCG Training Center Petaluma

IT-A School

[Address Line 1]

[Address Line 2]

POC: [Enter text.]

(000) 000-0000

