



ASTERISK BOOT CAMP - COURSE OUTLINE

DAY 1 - Telephony & Asterisk Theory

Module 1 - Digium and Asterisk

Provides students with a brief overview of the history of both the Asterisk open-source PBX project and Digium, the company behind Asterisk.

Module 2 - Licensing Asterisk

Overview of the GPL and BSD licenses used by Asterisk.

Module 3 - What Asterisk can do

Gives the student a general idea of some of Asterisk's capabilities, with graphic examples and case studies.

Module 4 - Understanding Telephony

Provides the student with a comprehensive understanding of the telephony concepts necessary to construct an effective Asterisk system, including:

- Network design
- Principles of circuit switching
- Principles of Digital Audio
- Principles of Time Division Multiplexing
- T1 / E1
- ISDN PRI

Module 5 - Understanding VoIP

Provides a comprehensive understanding of the concepts necessary to work with Asterisk in a VoIP environment, including:

- Network Design
- Packetization
- Packet Overhead
- VoIP Protocols, including IAX2 and SIP
- Codecs
- Jitter and Packet Loss



Module 6: Digium Hardware

Provides the student with an overview of Digium's various hardware products which can be used in assembling an Asterisk solution

Module 7: Asterisk Architecture

Draws heavily on the concepts introduced in modules 4 and 5 in order to provide the student with an understanding of how Asterisk works internally.

DAY 2 - Station & Dialplan Configuration

Module 8: Installing Asterisk

Understanding the Asterisk versioning and development process, and walks the student through selecting and installing the appropriate version of Asterisk.

Lab 1: Installing Asterisk

Module 9: Configuring Zaptel for FXS ports

This module introduces the student to the Zapata telephony interface and how to configure FXS ports for use with Asterisk

Lab 2: Setting up a ZAP Phone

Module 10: Configuring SIP stations

This module gives the student an overview of using SIP for connecting station equipment to Asterisk, configuring sip.conf for use with station equipment, and provisioning a Polycom desk set to talk with Asterisk.

Lab 3: Setting up a SIP Phone



Module 11: Planning a Dialplan

An overview of numbering plans. The North American Numbering Plan is used as a model for smaller-scale numbering plans, and several examples are given in order to guide the student into devising a numbering plan appropriate for any size installation.

Module 12: Basics of extensions.conf

Introduces the student to extensions.conf concepts, including:

- Asterisk extension theory
- Extension and priority numbering
- Basic Applications
- Pattern Matching
- Variables

Lab 4: A Basic Dialplan

Module 13: Intermediate Dialplan Logic

This module expands on module 12, covering:

- Asterisk Special Extensions
- Voicemail
- IVR menus
- The Goto() application
- Priority labeling

Lab 5: Creating an IVR menu

Module 14: Advanced Dialplan Logic

Further expands on modules 12 and 13, covering:

- Variables in-depth
- Functions
- Timeouts
- Expressions
- Conditional Branching
- Conditional Looping

Lab 6: Improving the IVR

DAY 3 - Trunking



Module 15: Zaptel and Analog Trunking

Offers an overview of using Zaptel and analog trunks to connect Asterisk to the PSTN, including understanding and mitigating noise, echo, and attenuation.

Lab 7: Connecting with analog trunks

Module 16: VoIP Connectivity with IAX2

This module covers using IAX2 to connect with other Asterisk boxes.

Lab 8: Connecting with IAX2

Module 17: VoIP Connectivity with SIP

This module covers using SIP to connect to other Asterisk boxes.

Lab 9: Connecting with SIP

Module 18: Zaptel, T1, and PRI

This module covers configuring Zaptel to use T1 spans and ISDN PRI trunks.

Lab 10: Configuring ISDN PRI

Day 4 - Advanced Concepts

Module 19 - Macros and the AstDB

This module covers creating and using macros as well as using Asterisk's built-in database

Lab 11: Macros / AstDB

Module 20: Queues

This module covers queueing theory and setting up call queues in Asterisk

Lab 12: Queues

Module 21: Troubleshooting

This module covers several scenarios where things have gone wrong, and expands upon the skills that the student has learned in previous modules

Module 22: DUNDi

This module covers the theory and implementation of the Distributed Universal Number Discovery protocol

Lab 13: DUNDi



Day 5 - Advanced Concepts & dCAP Review/Examination

Module 23: Asterisk Gateway Interface

This module covers the Asterisk Gateway Interface and its applications for writing powerful external applications

Module 24: Asterisk Manager Interface

This module covers the Asterisk Manager Interface and its applications for writing powerful external applications

dCAP Review

dCAP Examination