



iDirectGovernment Quality of Service Boot Camp (iQBC) Course

iQBC Course Syllabus – 2011

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iDirect Quality of Service Boot Camp (iQBC)

The iDirect Quality of Service Boot Camp (iQBC) course is intended for personnel responsible for designing and implementing Quality of Service and Service Level Agreements on iDirect Networks.

This course is designed to provide in-depth theoretical knowledge regarding the functionality of iDirect Quality of Service; its features which include Traditional and Group QoS, and additional background knowledge on the subject.

This five-day course, consisting of various QoS related subjects, starts from the very basics: IP Packets, packet capturing and examining, filtering and provisioning of packets using QoS, and builds the knowledge on Group QoS (GQoS). The theory is complimented by precise step-by-step hands-on instructions which consist of practical example and exercises. This intensive step-by-step hands-on training, combined with GQoS demonstrations, is designed to reinforce the theoretical portion of the course.

Presented in a clear and technical manner, the course provides a combination of lecture, demonstrations, and practical exercises that will give the student a comprehensive overview of basics on IP and the iDirect QoS which is the industry-leading service feature iDirect offers.

NOTE: The iDirect Operation and Maintenance training course is required before attending the iQBC training course.

Course Outline:

- Introduction to the iQBC Course
- Unit 1 – Bits, Bytes and Packets
- Unit 2 – Frame, Slots, and Allocation
- Unit 3 – Filters and Traffic Profiles & Traditional QoS
- Unit 4 – Group QoS
- Unit 5 – EIR and GQoS
- Unit 6 – Group QoS & Remote Groups
- Hands-on, Demonstrations, Exercises
- Review and Final Examination

NOTE: The course assumes the attendees come with good understanding of iDS Network including familiarity of using iBuilder/iMonitor, Linux system, IP routing, how to recover out of network remotes, etc. The instructor will give low priority on how to troubleshoot generic network issues other than QoS related issues

Handouts may be provided to supplement existing course material and to provide additional **up-to-date** details on currently released software.



Students are evaluated during the course to ensure they have attained an adequate level of understanding that will enable them to grasp the basics of QoS and design iDirect Group QoS. Each learner takes the final iQBC examination at the end of the course and if they receive a passing score will be awarded a certificate of course completion.

Introduction to the iQBC Course

The section covers all administrative information for the learner to include:

- 1) Sign in sheet
- 2) Facilities
- 3) Lunch
- 4) Training material
- 5) Hours of training
- 6) Classroom introductions

Unit 1: Bits, Bytes and Packets

This section covers

- 1) Using TCPDUMP and Wireshark
- 2) Understanding Packets
- 3) Understanding Protocol
- 4) Using iPerf

Unit 2: Frame, Slots and Allocation

This section covers:

- 1) Over the Air Protocol Structure
- 2) Payload Filling Strategy
- 3) Slot Allocation Strategy

Unit 3: Filters and Traffic Profiles

This section covers:

- 1) Filter Profiles – Basic Firewall
- 2) Traffic Profiles – Before Application Profile
- 3) Behavior of QoS Before Group Qos

Unit 4: Group QoS

This section covers:

- 1) Group QoS (GQoS)
- 2) GQoS Examples
- 3) Monitoring GQoS
- 4) Hands-on Lab Exercises
- 5) GQoS release Comparisons

- 6) QoS Rules Conversion During Upgrade
- 7) QoS for iSCPC

Unit 5: DVB-S2/ACM EIR

This section covers:

- 1) DVB-S2 and Bits per Hertz Density
- 2) Committed Information Rate and Required Bandwidth
- 3) Decision on Honoring CIR
- 4) Enhanced/Extended IR
- 5) Monitoring ACM and EIR
- 6) Allocation Fairness

Unit 6: Group QoS & Remote Service Groups

This section covers:

- 1) Remote Service Group vs Application Service Group
- 2) The two types of Service Groups: Remote Service Groups and Application Service Groups
- 3) Remote Profile vs Service Profile
- 4) Remote Profile concept pre-8.0 Traffic Profile
- 5) Remote in Remote Service Group is assigned Remote Profile
- 6) Remote in Application Service Group is assigned Service Profile

Hands-on, Demonstrations, and Exercises

Hands-on, demonstrations and exercises are interspersed throughout the entire iQBC training course. Each learner will have the opportunity to display knowledge and skills obtained through the lecture and demonstrations performed by the instructor. At the completion of each demonstration and exercises the learner should be able to perform the task with minimal instructor assists.

At the completion of this section the learner should be able to:

- 1) Identify Packets for the Purpose of Managing Quality of Service
- 2) Understand the Low Layer Over-the-Air (OTA) Protocol Behavior
- 3) Use Traffic Filters to Prevent Unwanted Traffic from Consuming Bandwidth
- 4) Understand the Traditional QoS Model
- 5) Describe GQoS Release Differences and Availability
- 6) Implement Application-Specific QoS Model Using Group QoS
- 7) Understand and Use Enhanced Information Rate Model in DVB-S2 Network
- 8) Understand and Use Remote Service Group Model in DVB-S2 Network

iDirect Quality of Service Boot Camp	Day One	Day Two	Day Three	Day Four	Day Five
0830 – 0920	Administrative – Introduction to iQBC Course	Unit Three	Unit Four	Unit Five	Unit Six & Lab
0930 – 1020	Unit One	Unit Three	Unit Four	Unit Five	Q & A
1030 – 1120	Unit One	Unit Three	Unit Four & Lab	Unit Five & Lab	Final Examination
1130 – 1150	Review/Q & A or Instructor Choice	Review/Q & A or Instructor Choice	Review/Q & A or Instructor Choice	Review/Q & A or Instructor Choice	Review/Q & A or Instructor Choice
1150 – 1250	Lunch	Lunch	Lunch	Lunch	Lunch
1300 – 1350	Unit 1 & Lab	Unit Three & Lab	Unit Four & Lab	Unit Five & Lab	Exam Review
1400 – 1450	Unit Two	Unit Four	Unit Four & Lab	Unit Six	Administrative/ Survey
1500 – 1550	Unit Two	Unit Four	Unit Four & Lab	Unit Six	Certificate Presentation
1600 – 1630	Review/Q & A or Instructor Choice	Review/Q & A or Instructor Choice	Review/Q & A or Instructor Choice	Review/Q & A or Instructor Choice	Dismissal
1630 – 1700					

Course Critique, Certificate Presentation

Following the completion of the class, the course final exam will be given and reviewed. Course critiques will be distributed and collected after completion for review by iDirect Government management. Course completion certificates will be provided to each learner who has completed all assigned phases of instruction.