SIP dialogs

How to handle SIP dialogs

Objectives

- Identify a SIP dialog and its characteristics
  - **Call-ID,**
  - **From-tag**
  - **To-tag**
- Understand how sequential requests are routed using Record-Route and Route

- Dialogs persist for the duration of a call or subscription
  - INVITE ←→ BYE
  - SUBSCRIBE ←→ NOTIFY
- Dialogs are identified by Call-ID, From-Tag and To-Tag
  - CALL-ID
  - FROM TAG
  - TO TAG
- Dialogs are a collection of transactions
  - Creating a dialog (INVITE, SUBSCRIBE)
  - Modify a dialog (RE-INVITE)
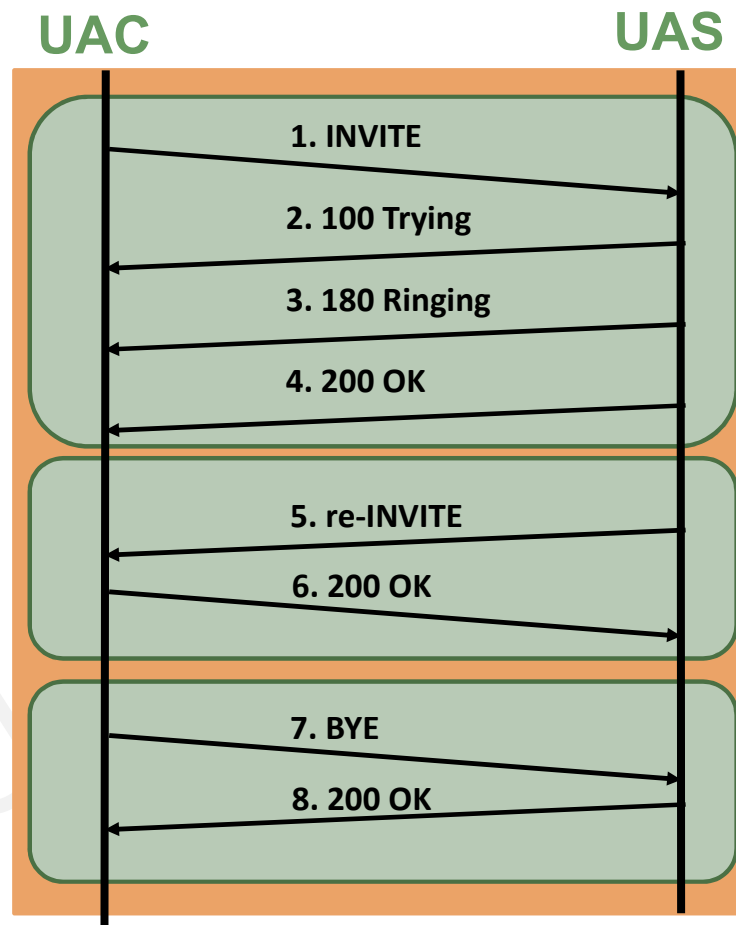 - Finish a dialog (BYE)

SIP dialogs

UAC   UAS

Transaction 1
- 1. INVITE →
- 2. 100 Trying ←
- 3. 180 Ringing ←
- 4. 200 OK ←

Transaction 2
- 5. re-INVITE ←
- 6. 200 OK →

Transaction 3
- 7. BYE →
- 8. 200 OK ←

Dialog

Sequential and Initial Requests

- Initial Requests
  - Can be easily identified by the To-tag
  - Example: First INVITE

- Sequential (in-dialog) requests
  - Same Call-ID, From: Tag and To: Tag
  - Easily identified by the presence of the To: Tag
  - BYE, ACK, RE-INVITES are examples of sequential requests

Initial Request (No To tag)

U 10.8.1.31:5060 -> 10.8.1.28:5061
INVITE sip:553414899810894@10.8.1.28:5061 SIP/2.0.
Record-Route: <sip:10.8.1.31;lr;ftag=797f5725;did=aa3.5a95beb4>.
Via: SIP/2.0/UDP 10.8.1.31:5060;branch=z9hG4bKed3.1d20b977.1.
Via: SIP/2.0/UDP
10.8.30.38:51317;rport=51317;received=10.8.30.38;branch=z9hG4bK9.
Max-Forwards: 69.
Contact: <sip:8574@10.8.30.38:51317;transport=UDP;mkp=yes>
To: <sip:99810894@pabx.voffice.com.br;transport=UDP>.
From: <sip:8574@pabx.voffice.com.br;transport=UDP>;tag=797f5725.
Call-ID: OTgwZTQ0ZDcxNDU3ZjVlZmFiMzU2NTQ0MjdiZTk4Yzc..
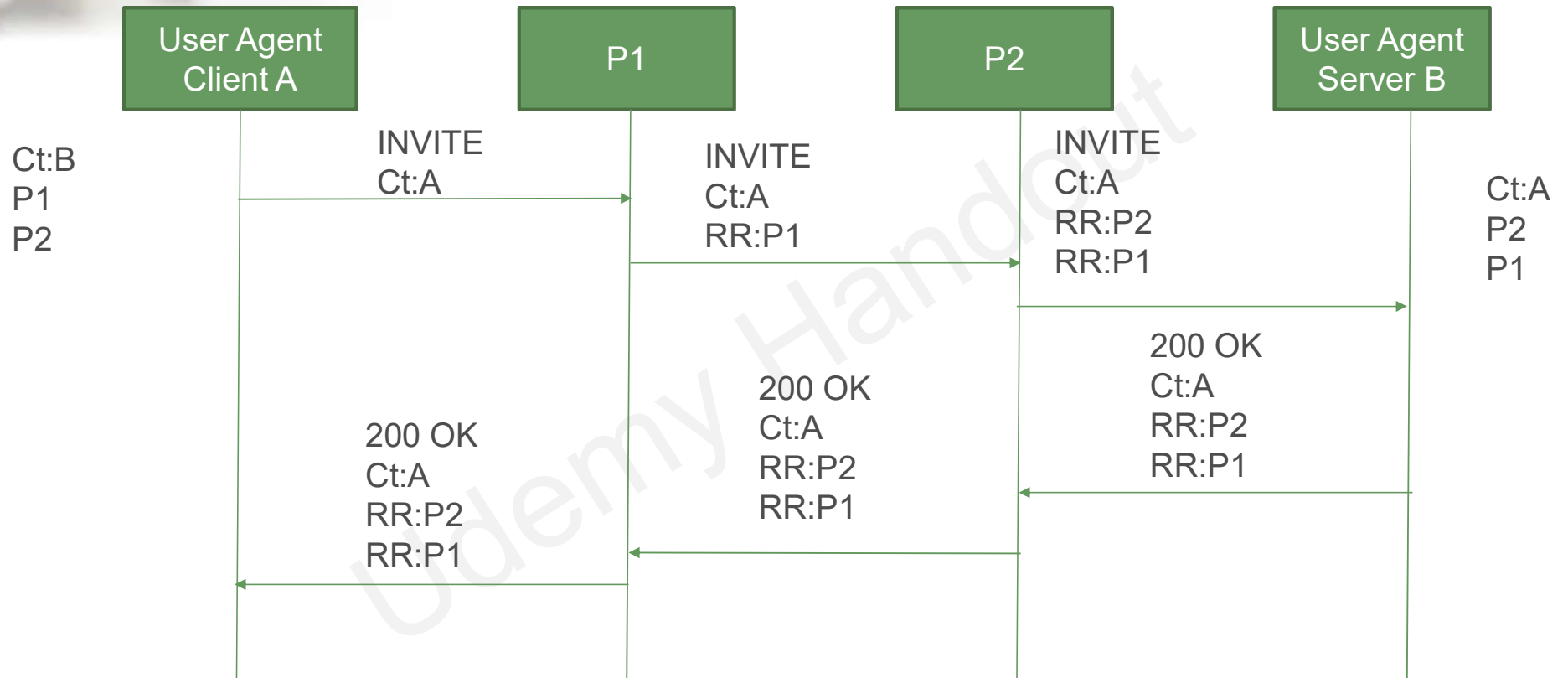CSeq: 2 INVITE.

Sequential Request (To: tag)

U 10.8.1.31:5060 -> 10.8.1.28:5060
BYE sip:mod_sofia@10.8.1.28:5060 SIP/2.0.
Via: SIP/2.0/UDP 10.8.1.31:5060;branch=z9hG4bKa046.76483684.0.
From: <sip:554830258589@10.8.1.31>;tag=124644260
To: "2135529800" <sip:2135529800@10.8.1.28>;tag=40v1avHe3jtFK
Call-ID: eb45fc2a-50e3-1234-76b7-0015c5f6b152.
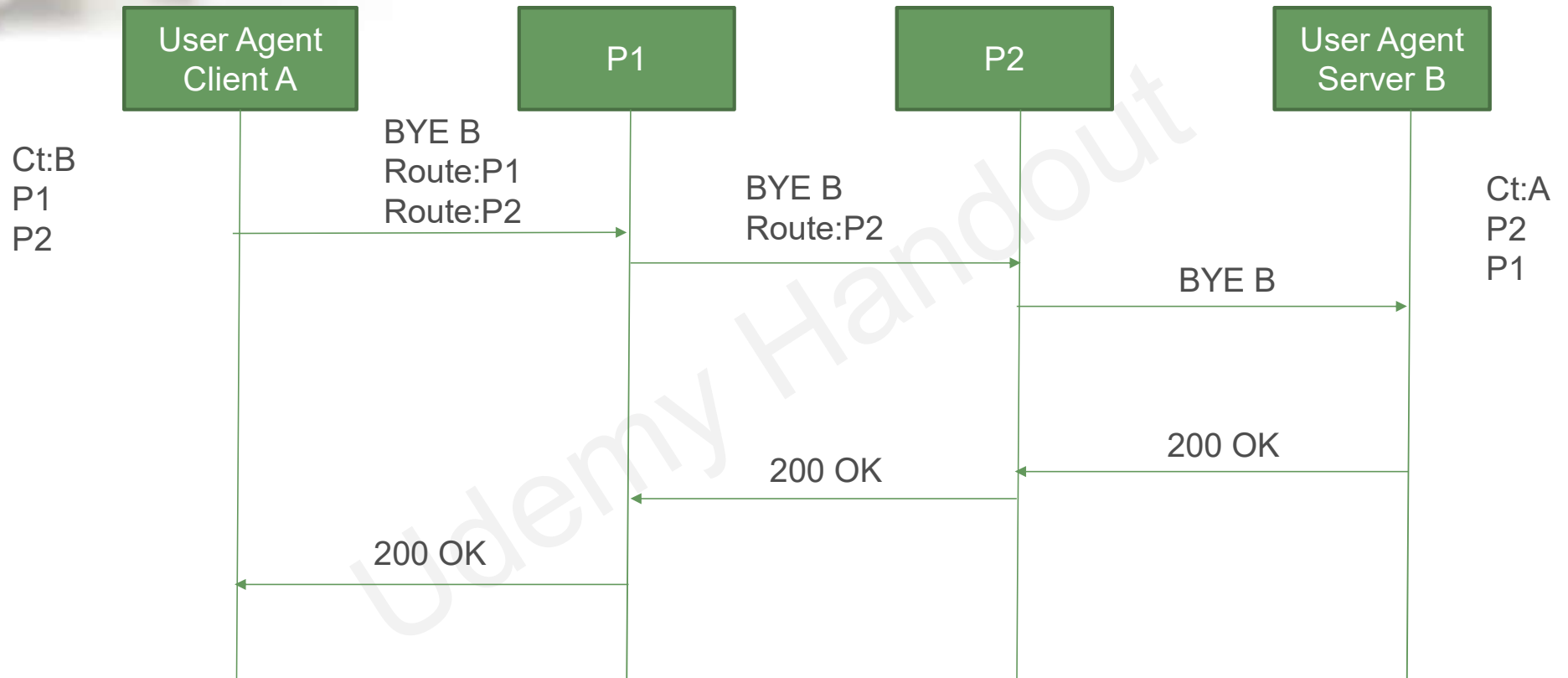CSeq: 87564471 BYE.
Contact: <sip:8587@10.8.30.13:5062>.

Record-Routing

User Agent Client A		P1		P2		User Agent Server B

Ct:B
P1
P2

INVITE
Ct:A

INVITE
Ct:A
RR:P1

INVITE
Ct:A
RR:P2
RR:P1

Ct:A
P2
P1

200 OK
Ct:A
RR:P2
RR:P1

200 OK
Ct:A
RR:P2
RR:P1

200 OK
Ct:A
RR:P2
RR:P1

Using the routes learned (Loose Routing)

| User Agent Client A | | P1 | | P2 | | User Agent Server B |

Ct:B
P1
P2

BYE B
Route:P1
Route:P2

BYE B
Route:P2

BYE B

Ct:A
P2
P1

200 OK

200 OK

200 OK

- In this chapter you have learned
  - **How to identify a transaction and a dialog**
  - **Describe a SIP dialog and its characteristics**
  - **Describe how dialogs are routed using Record-Route/Route**