



This PDF is generated from authoritative online content, and is provided for convenience only. This PDF cannot be used for legal purposes. For authoritative understanding of what is and is not supported, always use the online content. To copy code samples, always use the online content.

# Voice Microservices Events and Models Reference

[Basic call models](#)

---

## Contents

- 1 Simple call model
- 2 Connection-establishing phase for an internal/inbound call
  - 2.1 Abnormal call flow
- 3 Connection-establishing phase for an internal/inbound call to ACD
  - 3.1 Abnormal call flow
- 4 Connection-establishing phase for an internal/inbound call queued to multiple ACDs
  - 4.1 Abnormal call flow
- 5 Connection-establishing phase for an internal/inbound call with call parking
  - 5.1 Abnormal call flow
- 6 Connection-establishing phase for internal/inbound call with routing (RouteQueue case)
  - 6.1 Abnormal call flow
- 7 Connection-establishing phase for internal/inbound call with routing
  - 7.1 Abnormal call flow
- 8 Connection-establishing phase for an internal/inbound call with routing outbound
  - 8.1 Abnormal call flow
- 9 Connection-establishing phase for an outbound call
  - 9.1 Abnormal call flow
- 10 Connection-establishing phase while on hold (internal/outbound call)

---

This page describes the basic scenarios in which calls arrive in a contact center.

## Related documentation:

- 
- 
- 

## RSS:

- [For private edition](#)

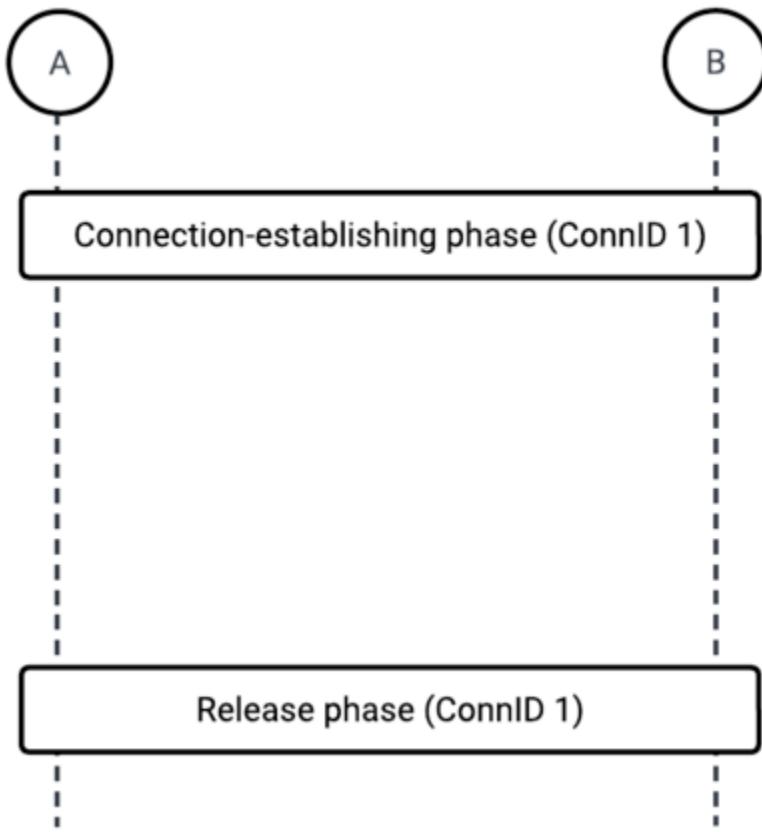
For simplicity, the examples on this page use abbreviated attribute values. For example, ConnID **1**, which – in actual events – displays as ConnID>@metainformation>.

The following comments and abbreviations are used in the call models:

- OPT—Optional.
- DIAL—Might be a dialed number or is not present if Voice Microservices have no information about the other party.

---

## Simple call model



Connection-establishing phase for an internal/inbound call

The following table describes the connection-establishing phase for an internal/inbound call.

Party A	Party B
<b>Make call to B (TMakeCall)</b> EventDialing ConnID <b>1</b> ThisDN <b>A</b> ThisDNRole <b>Origination</b> OtherDN <b>*DIAL</b> OtherDNRole <b>Destination</b> <b>*DIAL</b>	
	EventRinging ConnID <b>1</b> ThisDN <b>B</b> ThisDNRole <b>Destination</b>

	OtherDN <b>A</b> OtherDNRole <b>Origination</b> CallState <b>OK</b>
<b>Answer (TAnswerCall)</b>	
EventEstablished  ConnID <b>1</b> ThisDN <b>A</b> ThisDNRole <b>Origination</b> OtherDN <b>B</b> OtherDNRole <b>Destination</b>	EventEstablished  ConnID <b>1</b> ThisDN <b>B</b> ThisDNRole <b>Destination</b> OtherDN <b>A</b> OtherDNRole <b>Origination</b>
<b>Conversation</b>	

## Abnormal call flow

Interruption point	Party A	Party B
*	EventReleased  ConnID <b>1</b> ThisDN <b>A</b> ThisDNRole <b>Origination</b> CallState <b>OK</b>	
**	EventDestinationBusy  ConnID <b>1</b> ThisDN <b>A</b> ThisDNRole <b>Origination</b> CallState <sup>a</sup>	
***	EventReleased  ConnID <b>1</b> ThisDN <b>A</b> ThisDNRole <b>Origination</b> OtherDN <b>B</b> <sup>*DIAL</sup> OtherDNRole <b>Destination</b> <sup>*DIAL</sup> CallState <b>OK</b>	EventAbandoned  ConnID <b>1</b> ThisDN <b>B</b> OtherDN <b>A</b> CallState <b>OK</b>

a. CallState might have values that clarify the reason for the destination being busy, for instance CallState `SitInvalidNum`.

## Connection-establishing phase for an internal/inbound call to ACD

The following table describes the connection-establishing phase for an internal/inbound call to ACD.

Party A	Party B (ACD Group)	Party C
<b>Make call to B</b>		

EventDialing	EventQueued	
ConnID <b>1</b> ThisDN <b>A</b> ThisDNRole <b>Origination</b> OtherDN <b>B</b> *DIAL OtherDNRole <b>Destination</b> *DIAL	ConnID <b>1</b> ThisDN <b>B</b> ThisQueue <b>B</b> ThisDNRole <b>Destination</b> OtherDN <b>A</b> OtherDNRole <b>Origination</b>	
	<b>Diverts call to C</b>	
	EventDiverted	
	ConnID <b>1</b> ThisDN <b>B</b> ThisQueue <b>B</b> ThisDNRole <b>Destination</b> OtherDN <b>A</b> OtherDNRole <b>Origination</b> ThirdPartyDN <b>C</b> *OPT ThirdPartyDNRole <b>Destination</b> *OPT	
		EventRinging
		ConnID <b>1</b> ThisDN <b>C</b> ThisQueue <b>B</b> ThisDNRole <b>Destination</b> OtherDN <b>A</b> OtherDNRole <b>Origination</b> CallState <b>OK</b>
		<b>Answer (TAnswerCall)</b>
EventEstablished		EventEstablished
ConnID <b>1</b> ThisDN <b>A</b> ThisDNRole <b>Origination</b> OtherDN <b>C</b> OtherDNRole <b>Destination</b>		ConnID <b>1</b> ThisDN <b>C</b> ThisQueue <b>B</b> ThisDNRole <b>Destination</b> OtherDN <b>A</b> OtherDNRole <b>Origination</b>
<b>Conversation</b>		

## Abnormal call flow

Interruption point	Party A	Party B	Party C
*	EventReleased  ConnID <b>1</b> ThisDN <b>A</b> OtherDN <b>B</b> CallState <b>OK</b>	EventAbandoned  ConnID <b>1</b> ThisDN <b>B</b> OtherDN <b>A</b> CallState <b>OK</b>	
**	EventReleased  ConnID <b>1</b> ThisDN <b>A</b> OtherDN <b>B</b> CallState <b>OK</b>		
***	EventReleased		EventAbandoned

	ConnID <b>1</b> ThisDN <b>A</b> OtherDN <b>C</b> CallState <b>OK</b>		ConnID <b>1</b> ThisDN <b>C</b> OtherDN <b>A</b> CallState <b>OK</b>
--	---	--	---

Connection-establishing phase for an internal/inbound call queued to multiple ACDs

The following table describes the connection-establishing phase for an internal/inbound call queued to multiple ACDs.

Party A	Party B (ACD)	Party C (ACD)	Party D
<b>Make internal/inbound call to B (ACD)</b>			
EventDialing  ConnID <b>1</b> ThisDN <b>A</b> ThisDNRole <b>Origination</b> OtherDN <b>B</b> *DIAL OtherDNRole <b>Destination</b> *DIAL	EventQueued  ConnID <b>1</b> ThisDN <b>B</b> ThisQueue <b>B</b> ThisDNRole <b>Destination</b> OtherDN <b>A</b> OtherDNRole <b>Origination</b>		
		EventQueued  ConnID <b>1</b> ThisDN <b>C</b> ThisQueue <b>C</b> ThisDNRole <b>Destination</b> OtherDN <b>A</b> OtherDNRole <b>Origination</b>	
<b>Diverts call to D</b>			
	EventDiverted  ConnID <b>1</b> ThisDN <b>B</b> ThisDNRole <b>Origination</b> OtherDN <b>C</b> OtherDNRole <b>Destination</b>	EventDiverted  ConnID <b>1</b> ThisDN <b>C</b> ThisQueue <b>C</b> ThirdPartyDN <b>D</b> ThirdPartyQueue <b>B</b> CallState <b>Redirected</b> <sup>a</sup>	
			EventRinging  ConnID <b>1</b> ThisDN <b>D</b> ThisQueue <b>B</b> ThisDNRole <b>Destination</b> OtherDN <b>A</b> OtherDNRole <b>Origination</b> CallState <b>OK</b>
			<b>Answer (TAnswerCall)</b>

EventEstablished			EventEstablished
ConnID <b>1</b> ThisDN <b>A</b> ThisDNRole <b>Origination</b> OtherDN <b>D</b> OtherDNRole <b>Destination</b> CallState <b>OK</b>			ConnID <b>1</b> ThisDN <b>D</b> ThisDNRole <b>Destination</b> OtherDN <b>A</b> OtherDNRole <b>Origination</b> CallState <b>OK</b>
<b>Conversation</b>			

a. For ACD configurations where calls are distributed to agents assigned directly to ACD groups, CallState with a value of Redirected is present. For ACD configurations where calls are distributed to agents assigned to secondary ACD groups associated with top-level ACD queues, the CallState, with the value Redirected, is not present.

## Abnormal call flow

Interruption point	Party A	Party B	Party C	Party D
*	EventReleased  ConnID <b>1</b> ThisDN <b>A</b> OtherDN <b>B</b> CallState <b>OK</b>	EventAbandoned  ConnID <b>1</b> ThisDN <b>B</b> ThisQueue <b>B</b> OtherDN <b>A</b> CallState <b>OK</b>		
**	EventReleased  ConnID <b>1</b> ThisDN <b>A</b> OtherDN <b>B</b> CallState <b>OK</b>	EventAbandoned  ConnID <b>1</b> ThisDN <b>B</b> ThisQueue <b>B</b> OtherDN <b>A</b> CallState <b>OK</b>	EventAbandoned  ConnID <b>1</b> ThisDN <b>C</b> ThisQueue <b>C</b> OtherDN <b>A</b> CallState <b>OK</b>	
***	EventReleased  ConnID <b>1</b> ThisDN <b>A</b> OtherDN <b>D</b> CallState <b>OK</b>			
****	EventReleased  ConnID <b>1</b> ThisDN <b>A</b> OtherDN <b>D</b> CallState <b>OK</b>			EventAbandoned  ConnID <b>1</b> ThisDN <b>D</b> ThisQueue <b>C</b> OtherDN <b>A</b> CallState <b>OK</b>

Connection-establishing phase for an internal/inbound call with call parking

The following table describes the connection-establishing phase for an internal/inbound call with call

parking.

Party A	Party B
<b>Make call to B (TMakeCall)</b>	
EventDialing  ConnID <b>1</b> ThisDN <b>A</b> ThisDNRole <b>Origination</b> OtherDN <b>B</b> *DIAL OtherDNRole <b>Destination</b> *DIAL	
	<b>Call is parked on B</b>
EventDestinationBusy *OPT  ConnID <b>1</b> ThisDN <b>A</b> ThisDNRole <b>Origination</b> OtherDN <b>B</b> *DIAL OtherDNRole <b>Destination</b> *DIAL	EventQueued  ConnID <b>1</b> ThisDN <b>B</b> ThisDNRole <b>Destination</b> OtherDN <b>A</b> OtherDNRole <b>Origination</b> CallState <b>OK</b>
	<b>Call is picked up by B</b>
	EventRinging  ConnID <b>1</b> ThisDN <b>B</b> ThisDNRole <b>Destination</b> OtherDN <b>A</b> OtherDNRole <b>Origination</b> CallState <b>OK</b>
	<b>Answer (TAnswerCall)</b>
EventEstablished  ConnID <b>1</b> ThisDN <b>A</b> ThisDNRole <b>Origination</b> OtherDN <b>B</b> OtherDNRole <b>Destination</b>	EventEstablished  ConnID <b>1</b> ThisDN <b>B</b> ThisDNRole <b>Destination</b> OtherDN <b>A</b> OtherDNRole <b>Origination</b>
<b>Conversation</b>	

## Abnormal call flow

Interruption point	Party A	Party B
*	EventReleased  ConnID <b>1</b> ThisDN <b>A</b> ThisDNRole <b>Origination</b> OtherDN <b>B</b> *DIAL OtherDNRole <b>Destination</b> *DIAL CallState <b>OK</b>	EventAbandoned  ConnID <b>1</b> ThisDN <b>B</b> OtherDN <b>A</b> CallState <b>OK</b>

## Connection-establishing phase for internal/inbound call with routing (RouteQueue case)

The following table describes the connection-establishing phase for an internal/inbound call with routing (RouteQueue case).

Party A	Party B (Routing Point/CDN)	Party C
<b>Make incoming call to information service</b>		
EventDialing  ConnID <b>1</b> ThisDN <b>A</b> ThisDNRole <b>Origination</b> OtherDN <b>B</b> OtherDNRole <b>Destination</b>	EventQueued  ConnID <b>1</b> ThisDN <b>B</b> ThisQueue <b>B</b> ThisDNRole <b>Destination</b> OtherDN <b>A</b> OtherDNRole <b>Origination</b>  EventRouteRequest ConnID <b>1</b> ThisDN <b>B</b> ThisQueue <b>B</b> ThisDNRole <b>Destination</b> OtherDN <b>A</b> OtherDNRole <b>Origination</b>	
	<b>Route call to C <sup>a</sup> (TRouteCall)</b>	
	EventRouteUsed  ConnID <b>1</b> ThisDN <b>B</b> ThisDNRole <b>Destination</b> OtherDN <b>A</b> OtherDNRole <b>Origination</b> ThirdPartyDN <b>C</b> <sup>*OPT</sup> ThirdPartyDNRole <b>Destination</b> <sup>*OPT</sup>  EventDiverted ConnID <b>1</b> ThisDN <b>B</b> ThisQueue <b>B</b> ThisDNRole <b>Destination</b> OtherDN <b>A</b> OtherDNRole <b>Origination</b> ThirdPartyDN <b>C</b> <sup>*OPT</sup> ThirdPartyDNRole <b>Destination</b> <sup>*OPT</sup>	
		EventRinging  ConnID <b>1</b> ThisDN <b>C</b> ThisQueue <b>B</b> ThisDNRole <b>Destination</b> OtherDN <b>A</b> OtherDNRole <b>Origination</b> CallState <b>OK</b>
		<b>Answer (TAnswerCall)</b>
EventEstablished		EventEstablished

ConnID <b>1</b> ThisDN <b>A</b> ThisDNRole <b>Origination</b> OtherDN <b>C</b> OtherDNRole <b>Destination</b>		ConnID <b>1</b> ThisDN <b>C</b> ThisDNRole <b>Destination</b> OtherDN <b>A</b> OtherDNRole <b>Origination</b>
<b>Conversation</b>		

a. RouteCall to C (TRouteCall()) might be missing.

## Abnormal call flow

Interruption point	Party A	Party B	Party C
* and **	EventReleased  ConnID <b>1</b> ThisDN <b>A</b> OtherDN <b>B</b> CallState <b>OK</b>	EventAbandoned  ConnID <b>1</b> ThisDN <b>B</b> OtherDN <b>A</b> CallState <b>OK</b>	
***	EventReleased  ConnID <b>1</b> ThisDN <b>A</b> OtherDN <b>C</b> CallState <b>OK</b>		
****	EventReleased  ConnID <b>1</b> ThisDN <b>A</b> OtherDN <b>C</b> CallState <b>OK</b>		EventAbandoned  ConnID <b>1</b> ThisDN <b>C</b> OtherDN <b>A</b> CallState <b>OK</b>

## Connection-establishing phase for internal/inbound call with routing

The following table describes the connection-establishing phase for an internal/inbound call with routing.

Party A	Party B (Routing Point/CDN)	Party C
<b>Make incoming call to information service</b>		
EventDialing  ConnID <b>1</b> ThisDN <b>A</b> ThisDNRole <b>Origination</b> OtherDN <b>B</b> <sup>*DIAL</sup> OtherDNRole <b>Destination</b> <sup>*DIAL</sup>	EventRouteRequest  ConnID <b>1</b> ThisDN <b>B</b> ThisDNRole <b>Destination</b> OtherDN <b>A</b> OtherDNRole <b>Origination</b>	

	<b>Route call to C <sup>a</sup> (TRouteCall)</b>	
	EventRouteUsed ConnID <b>1</b> ThisDN <b>B</b> ThisDNRole <b>Destination</b> OtherDN <b>A</b> OtherDNRole <b>Origination</b> ThirdPartyDN <b>C</b> <sup>b</sup> ThirdPartyDNRole <b>Destination</b> *OPT CallState <b>OK/Redirected</b> <sup>c</sup>	
		EventRinging ConnID <b>1</b> ThisDN <b>C</b> ThisDNRole <b>Destination</b> OtherDN <b>A</b> OtherDNRole <b>Origination</b> CallState <b>OK</b>
<b>Answer (TAnswerCall)</b>		
EventEstablished ConnID <b>1</b> ThisDN <b>A</b> ThisDNRole <b>Origination</b> OtherDN <b>C</b> OtherDNRole <b>Destination</b>		EventEstablished ConnID <b>1</b> ThisDN <b>C</b> ThisDNRole <b>Destination</b> OtherDN <b>A</b> OtherDNRole <b>Origination</b>
<b>Conversation</b>		

a. Not present if a call has been routed by default; that is, a switch did not receive any routing instruction from a computer domain within a timeout configured on the switch side (scripted or otherwise) and therefore processed the call using switch logic.

b. Content of **ThirdPartyDN** depends on the call scenario:

- If information about the destination is available at the moment EventRouteUsed is generated, this attribute is mandatory; a DN where the call has been delivered must be reported.
- If the information is not available, but the call has been routed through Voice Microservices, this attribute is mandatory; a DN where the call has been sent must be reported.
- If a call has been routed to a default destination or routed by another application, this attribute is optional (depends on switch capabilities).

c. **CallState** has a value of **Redirected** (22) if a call has been routed by a switch. For some switches, the attribute **Callstate** might not be present.

## Abnormal call flow

<b>Interruption point</b>	<b>Party A</b>	<b>Party B</b>	<b>Party C</b>
*	EventReleased ConnID <b>1</b> ThisDN <b>A</b> OtherDN <b>B</b>	EventAbandoned ConnID <b>1</b> ThisDN <b>B</b> OtherDN <b>A</b>	

	CallState <b>OK</b>	CallState <b>OK</b>	
**	EventReleased  ConnID <b>1</b> ThisDN <b>A</b> OtherDN <b>C</b> CallState <b>OK</b>	EventAbandoned <sup>a</sup>  ConnID <b>1</b> ThisDN <b>B</b> OtherDN <b>A</b> CallState <b>OK</b>	
***	EventReleased  ConnID <b>1</b> ThisDN <b>A</b> OtherDN <b>C</b> CallState <b>OK</b>		
****	EventReleased  ConnID <b>1</b> ThisDN <b>A</b> OtherDN <b>C</b> CallState <b>OK</b>		EventAbandoned  ConnID <b>1</b> ThisDN <b>C</b> OtherDN <b>A</b> CallState <b>OK</b>

a. In this case, EventError must be sent after EventAbandoned to make the ReferenceID available.

Connection-establishing phase for an internal/inbound call with routing outbound

The following table describes the connection-establishing phase for an internal/inbound call with routing outbound.

Party A	Party B (Routing Point)	Party C
<b>Incoming call</b>		
EventDialing  ConnID <b>1</b> ThisDN <b>A</b> ThisDNRole <b>Origination</b> OtherDN <b>B</b> *DIAL OtherDNRole <b>Destination</b> *DIAL	EventRouteRequest  ConnID <b>1</b> ThisDN <b>B</b> ThisDNRole <b>Destination</b> OtherDN <b>A</b> OtherDNRole <b>Origination</b>	
	<b>Route call to C <sup>a</sup> (TRouteCall)</b>	
EventNetworkReached  ConnID <b>1</b> ThisDN <b>A</b> ThisDNRole <b>Origination</b> OtherDN <b>C</b> *DIAL OtherDNRole <b>Destination</b> *DIAL	EventRouteUsed  ConnID <b>1</b> ThisDN <b>B</b> ThisDNRole <b>Destination</b> OtherDN <b>A</b> OtherDNRole <b>Origination</b>  ThirdPartyDN <b>C</b> <sup>b</sup> ThirdPartyDNRole <b>Destination</b> *OPT CallState <b>OK/Redirected</b> <sup>c</sup>	EventRinging  ConnID <b>1</b> ThisDN <b>C</b> ThisDNRole <b>Destination</b> OtherDN <b>A</b> OtherDNRole <b>Origination</b> CallState <b>OK</b>

		<b>Answer (TAnswerCall)</b>
EventEstablished  ConnID <b>1</b> ThisDN <b>A</b> ThisDNRole <b>Origination</b> OtherDN <b>C</b> OtherDNRole <b>Destination</b>		EventEstablished  ConnID <b>1</b> ThisDN <b>C</b> ThisDNRole <b>Destination</b> OtherDN <b>A</b> OtherDNRole <b>Origination</b>
<b>Conversation</b>		

a. Not present if a call has been routed by default; that is, a switch did not receive any routing instruction from a computer domain within a timeout configured on the switch side (scripted or otherwise) and therefore processed the call using switch logic.  
b. Content of **ThirdPartyDN** depends on the call scenario:

- If information about the destination is available at the moment EventRouteUsed is generated, this attribute is mandatory; a DN where the call has been delivered must be reported.
- If the information is not available, but the call has been routed through Voice Microservices, this attribute is mandatory; a DN where the call has been sent must be reported.
- If a call has been routed to a default destination or routed by another application, this attribute is optional (depends on switch capabilities).

c. **CallState** has a value of **Redirected** (22) if a call has been routed by a switch. For some switches, the attribute **CallState** might not be present.

## Abnormal call flow

<b>Interruption point</b>	<b>Party A</b>	<b>Party B</b>	<b>Party C</b>
*	EventReleased  ConnID <b>1</b> ThisDN <b>A</b> OtherDN <b>B</b> CallState <b>OK</b>	EventAbandoned  ConnID <b>1</b> ThisDN <b>B</b> OtherDN <b>A</b> CallState <b>OK</b>	
**	EventReleased  ConnID <b>1</b> ThisDN <b>A</b> OtherDN <b>C</b> CallState <b>OK</b>		EventAbandoned  ConnID <b>1</b> ThisDN <b>C</b> OtherDN <b>A</b> CallState <b>OK</b>

## Connection-establishing phase for an outbound call

The following table describes the connection-establishing phase for an outbound call.

<b>Party A</b>	<b>Party B</b>
<b>Make outside call (TMakeCall)</b>	
EventDialing	

ConnID <b>1</b> ThisDN <b>A</b> ThisDNRole <b>Origination</b> OtherDN <b>B</b> *DIAL OtherDNRole <b>Destination</b> *DIAL	
EventNetworkReached <sup>a</sup>  ConnID <b>1</b> ThisDN <b>A</b> ThisDNRole <b>Origination</b> OtherDN <b>B</b> *DIAL OtherDNRole <b>Destination</b> *DIAL	
<b>Answer</b>	
EventEstablished  ConnID <b>1</b> ThisDN <b>A</b> ThisDNRole <b>Origination</b> OtherDN <b>B</b> *OPT OtherDNRole <b>Destination</b> *OPT	
<b>Conversation</b>	

a. When a switch does not report network reached, Voice Microservices simulate EventNetworkReached right before distributing EventEstablished.

## Abnormal call flow

Interruption point	Party A
*	EventReleased  ConnID <b>1</b> ThisDN <b>A</b> OtherDN <b>B</b> CallState <b>OK</b>
**	EventDestinationBusy  ConnID <b>1</b> ThisDN <b>A</b> OtherDN <b>B</b> CallState <sup>a</sup>
***	EventReleased  ConnID <b>1</b> ThisDN <b>A</b> OtherDN <b>B</b> CallState <b>OK</b>

a. CallState might have values that clarify the reason for the destination being busy, for instance CallStateSipInvalidNum.

---

Connection-establishing phase while on hold (internal/outbound call)

The following table describes the connection-establishing phase for an internal/outbound call while on hold.

Party A	Party B
<b>Call to B</b>	
EventDialing  ConnID <b>1</b> ThisDN <b>A</b> ThisDNRole <b>Origination</b> OtherDN <b>B</b> OtherDNRole <b>Destination</b> CallState <b>OK</b>	EventRinging  ConnID <b>1</b> ThisDN <b>B</b> ThisDNRole <b>Destination</b> OtherDN <b>A</b> OtherDNRole <b>Origination</b> CallState <b>OK</b>
<b>Hold</b>	
EventHeld  ConnID <b>1</b> ThisDN <b>A</b> OtherDN <b>B</b>	
	<b>Answer</b>
EventEstablished  ConnID <b>1</b> ThisDN <b>A</b> OtherDN <b>B</b>	EventEstablished  ConnID <b>1</b> ThisDN <b>B</b> OtherDN <b>A</b>
<b>Retrieve</b>	
EventRetrieved  ConnID <b>1</b> ThisDN <b>A</b> OtherDN <b>B</b> CallState <b>OK</b>	