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Voice Microservices Events and Models Reference

[Basic call models](#)

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

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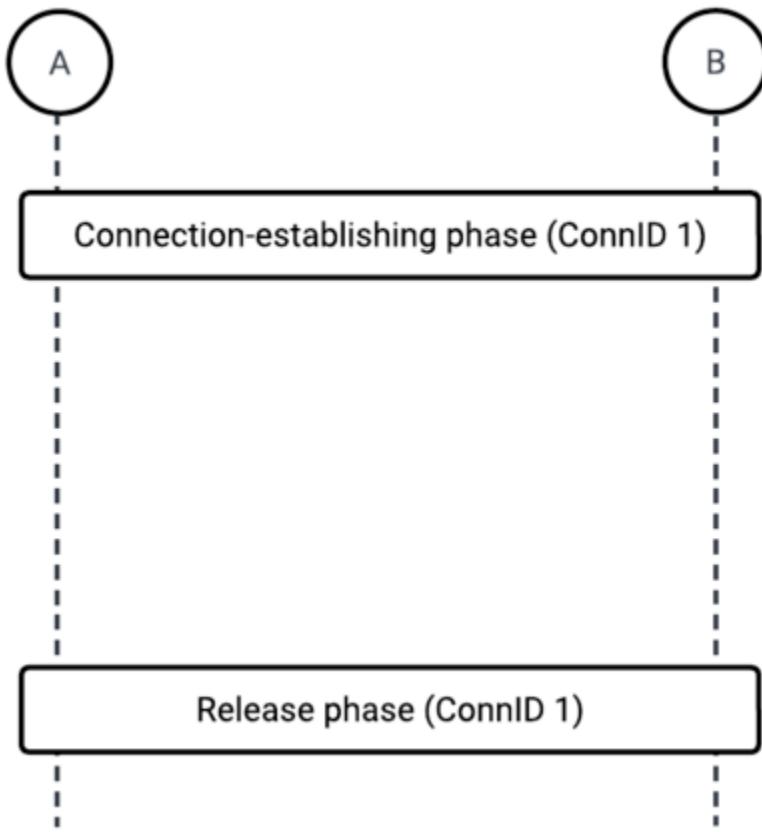
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For simplicity, the examples on this page use abbreviated attribute values. For example, ConnID **1**, which – in actual events – displays as ConnID>@metainformation>.

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

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

Abnormal call flow

Interruption point	Party A	Party B
*	EventReleased ConnID 1 ThisDN A ThisDNRole Origination CallState OK	
**	EventDestinationBusy ConnID 1 ThisDN A ThisDNRole Origination CallState ^a	
***	EventReleased ConnID 1 ThisDN A ThisDNRole Origination OtherDN B ^{*DIAL} OtherDNRole Destination ^{*DIAL} CallState OK	EventAbandoned ConnID 1 ThisDN B OtherDN A CallState OK

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
Make call to B		

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

Abnormal call flow

Interruption point	Party A	Party B	Party C
*	EventReleased ConnID 1 ThisDN A OtherDN B CallState OK	EventAbandoned ConnID 1 ThisDN B OtherDN A CallState OK	
**	EventReleased ConnID 1 ThisDN A OtherDN B CallState OK		
***	EventReleased		EventAbandoned

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

EventEstablished			EventEstablished
ConnID 1 ThisDN A ThisDNRole Origination OtherDN D OtherDNRole Destination CallState OK			ConnID 1 ThisDN D ThisDNRole Destination OtherDN A OtherDNRole Origination CallState OK
Conversation			

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 1 ThisDN A OtherDN B CallState OK	EventAbandoned ConnID 1 ThisDN B ThisQueue B OtherDN A CallState OK		
**	EventReleased ConnID 1 ThisDN A OtherDN B CallState OK	EventAbandoned ConnID 1 ThisDN B ThisQueue B OtherDN A CallState OK	EventAbandoned ConnID 1 ThisDN C ThisQueue C OtherDN A CallState OK	
***	EventReleased ConnID 1 ThisDN A OtherDN D CallState OK			
****	EventReleased ConnID 1 ThisDN A OtherDN D CallState OK			EventAbandoned ConnID 1 ThisDN D ThisQueue C OtherDN A CallState OK

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

Abnormal call flow

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

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
Make incoming call to information service		
EventDialing ConnID 1 ThisDN A ThisDNRole Origination OtherDN B OtherDNRole Destination	EventQueued ConnID 1 ThisDN B ThisQueue B ThisDNRole Destination OtherDN A OtherDNRole Origination EventRouteRequest ConnID 1 ThisDN B ThisQueue B ThisDNRole Destination OtherDN A OtherDNRole Origination	
	Route call to C ^a (TRouteCall)	
	EventRouteUsed ConnID 1 ThisDN B ThisDNRole Destination OtherDN A OtherDNRole Origination ThirdPartyDN C ^{*OPT} ThirdPartyDNRole Destination ^{*OPT} EventDiverted ConnID 1 ThisDN B ThisQueue B ThisDNRole Destination OtherDN A OtherDNRole Origination ThirdPartyDN C ^{*OPT} ThirdPartyDNRole Destination ^{*OPT}	
		EventRinging ConnID 1 ThisDN C ThisQueue B ThisDNRole Destination OtherDN A OtherDNRole Origination CallState OK
		Answer (TAnswerCall)
EventEstablished		EventEstablished

ConnID 1 ThisDN A ThisDNRole Origination OtherDN C OtherDNRole Destination		ConnID 1 ThisDN C ThisDNRole Destination OtherDN A OtherDNRole Origination
Conversation		

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

Abnormal call flow

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

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
Make incoming call to information service		
EventDialing ConnID 1 ThisDN A ThisDNRole Origination OtherDN B ^{*DIAL} OtherDNRole Destination ^{*DIAL}	EventRouteRequest ConnID 1 ThisDN B ThisDNRole Destination OtherDN A OtherDNRole Origination	

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

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

Interruption point	Party A	Party B	Party C
*	EventReleased ConnID 1 ThisDN A OtherDN B	EventAbandoned ConnID 1 ThisDN B OtherDN A	

	CallState OK	CallState OK	
**	EventReleased ConnID 1 ThisDN A OtherDN C CallState OK	EventAbandoned ^a ConnID 1 ThisDN B OtherDN A CallState OK	
***	EventReleased ConnID 1 ThisDN A OtherDN C CallState OK		
****	EventReleased ConnID 1 ThisDN A OtherDN C CallState OK		EventAbandoned ConnID 1 ThisDN C OtherDN A CallState OK

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

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

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

Interruption point	Party A	Party B	Party C
*	EventReleased ConnID 1 ThisDN A OtherDN B CallState OK	EventAbandoned ConnID 1 ThisDN B OtherDN A CallState OK	
**	EventReleased ConnID 1 ThisDN A OtherDN C CallState OK		EventAbandoned ConnID 1 ThisDN C OtherDN A CallState OK

Connection-establishing phase for an outbound call

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

Party A	Party B
Make outside call (TMakeCall)	
EventDialing	

ConnID 1 ThisDN A ThisDNRole Origination OtherDN B *DIAL OtherDNRole Destination *DIAL	
EventNetworkReached ^a ConnID 1 ThisDN A ThisDNRole Origination OtherDN B *DIAL OtherDNRole Destination *DIAL	
Answer	
EventEstablished ConnID 1 ThisDN A ThisDNRole Origination OtherDN B *OPT OtherDNRole Destination *OPT	
Conversation	

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 1 ThisDN A OtherDN B CallState OK
**	EventDestinationBusy ConnID 1 ThisDN A OtherDN B CallState ^a
***	EventReleased ConnID 1 ThisDN A OtherDN B CallState OK

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