Voice Microservices Events and Models Reference

Holding, transferring, and conferencing

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Contents

Learn about the functions and events related to placing calls on hold, transferring calls, and creating conference calls.

Related documentation:

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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.

Hold/Retrieve function, consulted party answers

Party A	Party B	Party C
	Call-establishing phase (ConnID 1)	
	Hold (THoldCall)	
	EventHeld ConnID **1** ThisDN **B** OtherDN **A**	
	Make call to C (Consultation) (TMakeCall)	
	Call-establishing phase (ConnID 2)	
	Release phase (ConnID 2)	
	Retrieve call from A (TRetrieveCall)	
	EventRetrieved [a]	

	ConnID **1** ThisDN **B** OtherDN **A** CallState **OK**	
Release phase (ConnID 1)		

a. With EventRetrieved, the values for attributes **ThisDNRole** and **ThisQueue** are the same as those for the attributes of the same names, if any, in the events preceding EventRetrieved (EventEstablished and EvenRinging). For non-ACD calls, however, **ThisQueue** is not reported.

Abnormal call flow

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

Hold/Retrieve function, consulted party does not answer

Party A	Party B	Party C
Call-establishing phase (ConnID 1)		
	Hold (THoldCall)	
	EventHeld ConnID **1** ThisDN **B** OtherDN **A**	
Unsuccessful internal call (party does not answer) (ConnID 2)		
	Retrieve call from A (TRetrieveCall)	

	EventRetrieved [a] ConnID **1** ThisDN **B** OtherDN **A** CallState **OK**	
Release phase (ConnID 1)		

a. With EventRetrieved, the values for attributes **ThisDNRole** and **ThisQueue** are the same as those for the attributes of the same names, if any, in the events preceding EventRetrieved (EventEstablished and EvenRinging). For non-ACD calls, however, **ThisQueue** is not reported.

Abnormal call flow

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

Single-step transfer

Party A	Party B	Party C
Call-establishing phase (ConnID 1)		
	Single-step transfer to C (TSingleStepTransfer)	
EventPartyChanged ConnID **1** PreviousConnID **1** ThisDN **A** OtherDN **C** ThirdPartyDN **B** ThirdPartyDNRole **TransferredBy** CallState **Transferred**	EventReleased ConnID **1** ThisDN **B** ThirdPartyDN **C** OtherDN **A** CallState **Transferred** Cause **1stepTransfer**	EventRinging ConnID **1** ThisDN **C** OtherDN **A** ThirdPartyDN **B** ThirdPartyDNRole **TransferredBy** CallState **Transferred**
		Answer (TAnswerCall)

		EventEstablished
		ConnID **1** ThisDN **C** OtherDN **A**

Abnormal call flow

Interruption point	Party A	Party B	Party C
*	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**

Single-step transfer (outbound)

Party A	Party B	Party C
Call-establishing phase (ConnID 1)		
	Single-step transfer to C (TSingleStepTransfer)	
EventPartyChanged ConnID **1** PreviousConnID **1** ThisDN **A** OtherDN **C** ThirdPartyDN **B** ThirdPartyDNRole **TransferredBy** CallState **Transferred** EventNetworkReached ConnID **1** ThisDN **A** OtherDN **C** *DIAL OtherDNRole **Destination** *DIAL	EventReleased ConnID **1** ThisDN **B** ThirdPartyDN **C** OtherDN **A** CallState **Transferred** Cause **1stepTransfer**	EventRinging ConnID **1** ThisDN **C** OtherDN **A** ThirdPartyDN **B** ThirdPartyDNRole **TransferredBy** CallState **Transferred**
		Answer (TAnswerCall)
		EventEstablished ConnID **1** ThisDN **C** OtherDN **A**

Abnormal call flow

Interruption point	Party A	Party B	Party C
*	**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**

Mute transfer

Party A	Party B	Party C
Call-establishing phase (ConnID 1)		
	Mute transfer to C (TMuteTransfer*)	
	EventHeld ConnID **1** ThisDN **B** OtherDN **A**	
	EventDialing ConnID **2** ThisDN **B** ThisDNRole **Origination** OtherDN **C** OtherDNRole **Destination**	**EventRinging** ConnID **2** ThisDN **C** ThisDNRole **Destination** OtherDN **B** OtherDNRole **Origination** CallState **OK**
EventPartyChanged ConnID **1** PreviousConnID **1** ThisDN **A** OtherDN **C** ThirdPartyDN **B** ThirdPartyDNRole **TransferredBy** CallState **Transferred**	**EventReleased** ConnID **1** ThisDN **B** OtherDN **A** CallState **Transferred** EventReleased ConnID **2** ThisDN **B** ThisDNRole **Origination** OtherDN **C** OtherDNRole **Destination** CallState **Transferred**	**EventPartyChanged** ConnID **1** PreviousConnID **2** ThisDN **C** OtherDN **A** ThirdPartyDN **B** ThirdPartyDNRole **TransferredBy** CallState **Transferred**

		Answer (TAnswerCall)
		EventEstablished ConnID **1** ThisDN **C** OtherDN **A**
Release phase (ConnID 1)		

Abnormal call flow

Interruption point	Party A	Party B	Party C
*	EventReleased ConnID **1** ThisDN **A** OtherDN **B** CallState **OK**	EventReleased ConnID **1** ThisDN **B** OtherDN **A** CallState **OK**	
**	EventReleased ConnID **1** ThisDN **A** OtherDN **C** CallState **OK**	EventReleased ConnID **1** ThisDN **B** OtherDN **A** CallState **OK** EventReleased ConnID **2** ThisDN **B** OtherDN **C** CallState **OK**	EventAbandoned ConnID **2** ThisDN **C** OtherDN **B** CallState **OK**
***	EventReleased ConnID **1** ThisDN **B** OtherDN **C** CallState **OK**		EventAbandoned ConnID **1** ThisDN **C** OtherDN **B** CallState **OK**

Two-step transfer: complete after consulted party answers

Party A	Party B	Party C
Call-establishing phase (ConnID 1)		
	Hold (TInitiateTransfer*)	
	EventHeld ConnID **1** ThisDN **B** OtherDN **A**	
	Consultation call to C **(TInitiateTransfer continues)**	

Call-establishing phase (ConnID 2)		
	Transfer held call to C (TCompleteTransfer)	
EventPartyChanged ConnID **1** PreviousConnID **1** ThisDN **A** OtherDN **C** ThirdPartyDN **B** ThirdPartyDNRole **TransferredBy** CallState **Transferred**	EventReleased ConnID **1** ThisDN **B** OtherDN **A** CallState **Transferred** EventReleased ConnID **2** ThisDN **B** OtherDN **C** CallState **Transferred**	EventPartyChanged ConnID **1** PreviousConnID **2** ThisDN **C** OtherDN **A** ThirdPartyDN **B** ThirdPartyDNRole **TransferredBy** CallState **Transferred**
Release phase (ConnID 1)		

Abnormal call flow

Interruption point	Party A	Party B	Party C
*	EventReleased ConnID **1** ThisDN **A** OtherDN **B** CallState **OK**	EventReleased ConnID **1** ThisDN **B** OtherDN **A** CallState **OK**	
**	EventReleased ConnID **1** ThisDN **A** OtherDN **B** CallState **OK**	EventReleased ConnID **1** ThisDN **B** OtherDN **A** CallState **OK** EventReleased ConnID **2** ThisDN **B** OtherDN **C** CallState **OK**	EventAbandoned ConnID **2** ThisDN **C** OtherDN **B** CallState **OK**

Two-step transfer: complete before consulted party answers (blind)

Party A	Party B	Party C
Call-establishing phase (ConnID 1)		
	Hold (TInitiateTransfer)	
	EventHeld	

	ConnID **1** ThisDN **B** OtherDN **A**	
	Consultation call to C **(TInitiateTransfer continues)**	
	EventDialing ConnID **2** ThisDN **B** ThisDNRole **Origination** OtherDN **C** *DIAL OtherDNRole **Destination** *DIAL	EventRinging ConnID **2** ThisDN **C** ThisDNRole **Destination** OtherDN **B** OtherDNRole **Origination** CallState **OK**
	Transfer held call to C **(TCompleteTransfer)**	
EventPartyChanged ConnID **1** PreviousConnID **1** ThisDN **A** OtherDN **C** ThirdPartyDN **B** ThirdPartyDNRole **TransferredBy** CallState **Transferred**	EventReleased ConnID **1** ThisDN **B** OtherDN **A** CallState **Transferred** EventReleased ConnID **2** ThisDN **B** OtherDN **C** CallState **Transferred**	EventPartyChanged ConnID **1** PreviousConnID **2** ThisDN **C** OtherDN **A** ThirdPartyDN **B** ThirdPartyDNRole **TransferredBy** CallState **Transferred**
		Answer (TAnswerCall)
		EventEstablished ConnID **1** ThisDN **C** OtherDN **A**
Release phase (ConnID 1)		

If a call appears on the terminating party after transfer completion, the **ConnID** field of EventRinging is equal to the connection ID of the original call (ConnID 1), and EventPartyChanged is not generated.

Abnormal call flow

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

	ConnID **1** ThisDN **A** OtherDN **B** CallState **OK**	ConnID **1** ThisDN **B** OtherDN **A** CallState **OK** EventReleased ConnID **2** ThisDN **B** OtherDN **C** CallState **OK**	ConnID **2** ThisDN **C** OtherDN **B** CallState **OK**
***	EventReleased ConnID **1** ThisDN **A** OtherDN **C** CallState **OK**		EventAbandoned ConnID **1** ThisDN **C** OtherDN **A** CallState **OK**

Two-step transfer to ACD

Two-step transfer to ACD means that a call is waiting in a queue, and the transfer completed before any ACD agent is available to receive the call.

The following table describes a two-step transfer to ACD.

Party A	Party B	Party C (ACD)	Party D
Call-establishing phase (ConnID 1)			
	Hold (TInitiateTransfer)		
	EventHeld ConnID **1** ThisDN **B** OtherDN **A**		
	Consultation call to C (TInitiateTransfer continues)		
	EventDialing ConnID **2** ThisDN **B** OtherDN **C** *DIAL	EventQueued ConnID **2** ThisDN **C** ThisQueue **C** OtherDN **B**	
	Transfer held call to C (TCompleteTransfer)		
EventPartyChanged ConnID **1** PreviousConnID **1** ThisDN **A** OtherDN **C**	EventReleased ConnID **2** ThisDN **B** ThisDNRole **Origination** OtherDN **C**	EventPartyChanged ConnID **1** PreviousConnID **2** ThisDN **C** ThisQueue **C**	

		OtherDN **A** ThirdPartyDN **B** ThirdPartyDNRole **TransferredBy** CallState **Transferred**	
ThirdPartyDN **B** ThirdPartyDNRole **TransferredBy** CallState **Transferred**	OtherDNRole **Destination** CallState **Transferred** EventReleased ConnID **1** ThisDN **B** OtherDN **A** CallState **Transferred**		
		Diverts call to D	
		EventDiverted ConnID **1** ThisDN **C** OtherDN **A** ThirdPartyDN **C** *OPT ThirdPartyDNRole **Destination** *OPT	EventRinging ConnID **1** ThisDN **D** ThisQueue **C** OtherDN **A** CallState **OK**
			Answer (TAnswerCall)
			EventEstablished ConnID **1** ThisDN **D** ThisQueue **C** OtherDN **A** CallState **OK**
	Release phase (ConnID 1)		

If a call transfer is completed before it is put in an ACD queue, an EventPartyChanged is not generated.

Abnormal call flow

Interruption point	Party A	Party B	Party C	Party D
*	EventReleased ConnID **1** ThisDN **A** OtherDN **B** CallState **OK**	EventReleased ConnID **1** ThisDN **B** OtherDN **A** CallState **OK**		
**	EventReleased ConnID **1** ThisDN **A** OtherDN **B** CallState **OK**	EventReleased ConnID **1** ThisDN **B** OtherDN **A** CallState **OK** EventReleased ConnID **2** ThisDN **B** OtherDN **C** CallState **OK**	EventAbandoned ConnID **2** ThisDN **C** OtherDN **B** CallState **OK**	
***	EventReleased			EventAbandoned

	ConnID **1** ThisDN **A** OtherDN **D** CallState **OK**			ConnID **1** ThisDN **D** OtherDN **A** CallState **OK**

Two-step transfer to a Routing Point

Party A	Party B	Party C (ACD)	Party D
Call-establishing phase (ConnID 1)			
	Hold (TInitiateTransfer)		
	EventHeld ConnID **1** ThisDN **B** OtherDN **A**		
	Consultation call to C (TInitiateTransfer continues)		
	EventDialing ConnID **2** ThisDN **B** ThisDNRole **Origination** OtherDN **C** *DIAL OtherDNRole **Destination** CallType **Consult**	EventRouteRequest ConnID **2** ThisDN **C** ThisDNRole **Destination** OtherDN **B** OtherDNRole **Origination**	
	Transfer held call to C (TCompleteTransfer)		
EventPartyChanged ConnID **1** PreviousConnID **1** ThisDN **A** ThisDNRole **Origination** [a] OtherDN **C** ThirdPartyDN **B** ThirdPartyDNRole **TransferredBy** CallState **Transferred**	EventReleased ConnID **2** ThisDN **B** ThisDNRole **Origination** OtherDN **C** OtherDNRole **Destination** CallState **Transferred** EventReleased ConnID **1** ThisDN **B** ThisDNRole **Destination** OtherDN **A** CallState **Transferred**	EventPartyChanged ConnID **1** PreviousConnID **2** ThisDN **C** OtherDN **A** ThirdPartyDN **B** ThirdPartyDNRole **TransferredBy** CallState **Transferred**	
		Diverts call to D	
		EventRouteUsed ConnID **1** ThisDN **C** OtherDN **A**	EventRinging ConnID **1** ThisDN **D** OtherDN **A** CallState **OK**

		ThirdPartyDN **D** *OPT	
			Answer (TAnswerCall)
			EventEstablished ConnID **1** ThisDN **D** OtherDN **A**
Release phase (ConnID 1)			

a. **ThisDNRole** must be `Destination` if party B is the call originator.

Abnormal call flow

Interruption point	Party A	Party B	Party C	Party D
*	EventReleased ConnID **1** ThisDN **A** OtherDN **B** CallState **OK**	EventReleased ConnID **1** ThisDN **B** OtherDN **A** CallState **OK**		
**	EventReleased ConnID **1** ThisDN **A** OtherDN **B** CallState **OK**	EventReleased ConnID **1** ThisDN **B** OtherDN **A** CallState **OK** EventReleased ConnID **2** ThisDN **B** OtherDN **C** CallState **OK**	EventAbandoned ConnID **2** ThisDN **C** OtherDN **B** CallState **OK**	
***	EventReleased ConnID **1** ThisDN **A** OtherDN **C** CallState **OK**		EventAbandoned ConnID **1** ThisDN **C** OtherDN **A** CallState **OK**	
****	EventReleased ConnID **1** ThisDN **A** OtherDN **D** CallState **OK**			EventAbandoned ConnID **1** ThisDN **D** OtherDN **A** CallState **OK**

Single-step conference

Party A	Party B	Party C

Call-establishing phase (ConnID 1)		
	TSingleStepConference	
EventPartyAdded ConnID **1** ThisDN **A** OtherDN **C** ThirdPartyDN **B** [a]	EventPartyAdded ConnID **1** ThisDN **B** OtherDN **C** ThirdPartyDN **B** [a]	EventRinging ConnID **1** ThisDN **C** ThisDNRole **ConferenceMember** CallState **OK**
		EventEstablished ConnID **1** ThisDN **C** ThisDNRole **ConferenceMember** CallState **Conferenced**
Release from conference phase		
Release phase (ConnID 1)		

a. **ThirdPartyDN** has a value of C if Party C initiates the request for a conference.

Conference

Party A	Party B	Party C
Call-establishing phase (ConnID 1)		
	Hold	
	EventHeld ConnID **1** ThisDN **B** ThisDNRole **Previous Role of DN** OtherDN **A** OtherDNRole **Previous Role of DN**	
	Consultation call to C	
Call-establishing phase (ConnID 2)		
	Conference	
	EventReleased ConnID **2** ThisDN **B** OtherDN **C** CallState **Conferenced** EventRetrieved [a] ConnID **1** ThisDN **B** OtherDN **A** CallState **Conferenced**	

EventPartyAdded ConnID **1** ThisDN **A** OtherDN **C** ThirdPartyDN **B** ThirdPartyDNRole **AddedBy** CallState **Conferenced**	EventPartyAdded ConnID **1** ThisDN **B** OtherDN [b] **C** OtherDNRole **NewParty** ThirdPartyDN **B** ThirdPartyDNRole **AddedBy** CallState **Conferenced**	EventPartyChanged ConnID **1** PreviousConnID **2** ThisDN **C** ThirdPartyDN **B** ThirdPartyDNRole **ConferencedBy** CallState **Conferenced**
Release from conference phase		
Release phase (ConnID 1)		

a. With EventRetrieved, the values for attributes **ThisDNRole** and **ThisQueue** are the same as those for the attributes of the same names, if any, in the events preceding EventRetrieved (EventEstablished and EventRinging). For non-ACD calls, however, **ThisQueue** is not reported.
b. If only one party is added (as in the case of a simple conference call), the corresponding telephony object is specified in **OtherDN**. If more than one party is added, then the corresponding telephony objects are specified in **Extensions**.

Abnormal call flow

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

Blind conference (complete before consulted party answers)

Party A	Party B	Party C
Call-establishing phase (ConnID 1)		
	Hold	
	EventHeld ConnID **1** ThisDN **B** OtherDN **A**	
	Consultation call to C	
	EventDialing ConnID **2** ThisDN **B** ThisDNRole **Origination** OtherDN **C** [*DIAL] OtherDNRole **Destination** [*DIAL] CallType **Consult**	EventRinging ConnID **2** ThisDN **C** ThisDNRole **Destination** OtherDN **B** OtherDNRole **Origination** CallType **Consult**

	Conference	
	EventReleased ConnID **2** ThisDN **B** OtherDN **C** CallState **Conferenced** EventRetrieved [a] ConnID **1** ThisDN **B** OtherDN **A** CallState **Conferenced**	
EventPartyAdded ConnID **1** ThisDN **A** OtherDN **C** ThirdPartyDN **B** ThirdPartyDNRole **AddedBy** CallState **Conferenced**	EventPartyAdded ConnID **1** ThisDN **B** OtherDN **C** ThirdPartyDN **B** ThirdPartyDNRole **AddedBy** CallState **Conferenced**	EventPartyChanged ConnID **1** PreviousConnID **2** ThisDN **C** ThirdPartyDN **B** ThirdPartyDNRole **ConferencedBy** CallState **Conferenced**
		Answer (TAnswerCall)
		EventEstablished ConnID **1** ThisDN **C** CallState **Conferenced**
	Release from conference phase	
	Release phase (ConnID 1)	

a. With EventRetrieved, the values for attributes **ThisDNRole** and **ThisQueue** are the same as those for the attributes of the same names, if any, in the events preceding EventRetrieved (EventEstablished and EventRinging). For non-ACD calls, however, **ThisQueue** is not reported.

If a call appears on the terminating party after completion of conference, the **ConnID** field of EventRinging is equal to the connection ID of the original call (ConnID 1), and EventPartyChanged is not generated.

Abnormal call flow

Interruption point	Party A	Party B	Party C
*	EventReleased ConnID **1** ThisDN **A** OtherDN **B** CallState **OK**	EventReleased ConnID **1** ThisDN **B** OtherDN **A** CallState **OK**	
**	EventReleased ConnID **1** ThisDN **A** OtherDN **B** [*DIAL] CallState **OK**	EventPartyDeleted ConnID **1** ThisDN **B** OtherDN **A** OtherDNRole **DeletedParty** ThirdPartyDN **A** ThirdPartyDNRole **DeletedBy**	

		CallState **OK**	