Oracle CRM On Demand

CTI Developer's Guide Release 45

August 2022

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Preface

This preface introduces information sources that can help you use the application and this guide.

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1 **What's New in This Release**

What's New In Oracle CRM On Demand CTI Developer's Guide, Release 45

This guide has been updated to reflect only product version changes.

2 Overview of CTI and CRM On Demand Integration

Overview of CTI and CRM On Demand Integration

Oracle CRM On Demand Release 19 and later provides the ability to integrate directly with third-party computer telephony integration (CTI) software. This document explains the integration architecture, with details of the implementation requirements. This chapter includes the following topics:

- *About the CTI Integration*
- *CTI Agent Workflow*
- *Message Flow between the CTI Client Application and Oracle CRM On Demand*
- *Record Association Logic*

About the CTI Integration

The CTI integration (see the following figure) is a client-side form of integration that supports:

- Creation of interaction activity records in Oracle CRM On Demand, along with automatic association of existing Oracle CRM On Demand records that are matched to the customer (caller, person sending email, and so on)
- Screen pop for activity or associated records
- Interaction wrap-up
- Click-to-Dial from phone numbers in the Oracle CRM On Demand UI.

The third-party telephony platform includes automatic call distributor (ACD) and interactive voice response (IVR) facilities and handles incoming communication interactions, like phone calls and emails, and chat. Oracle CRM On Demand maintains activity records for each transaction, displays records related to the interaction (for example, the Contact record of the person calling) and provides a UI for the interaction.

For example, when a customer calls the call center, the switch routes the call to the agent who is logged into Oracle CRM On Demand, which creates an activity record to track the call, and automatically loads a record related to the call, like a contact record in which the work phone number matches the customer phone number.

All the call control and telephony state management remains on the CTI client application.
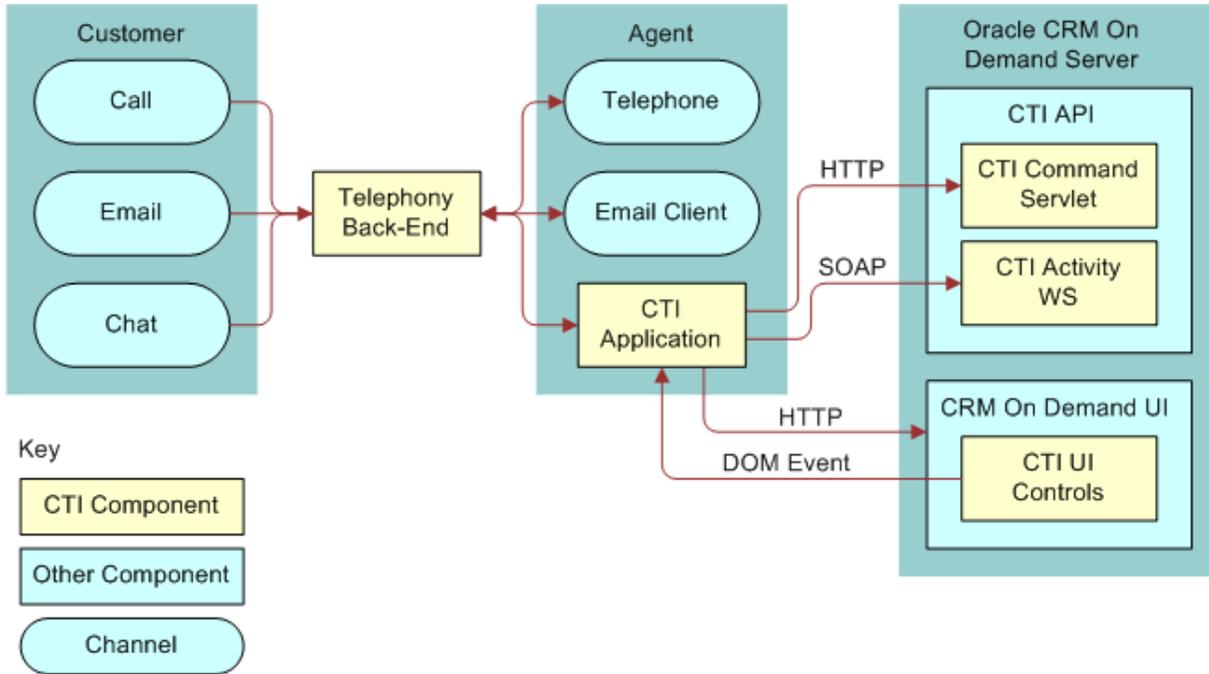
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CTI Agent Workflow

The flow chart shown in the following figure illustrates the agent workflow and the operations performed by the CTI client application and Oracle CRM On Demand for an incoming call.

When the call center agent accepts an interaction, Oracle CRM On Demand creates an activity and uses the activity's related record information to display a related record in Oracle CRM On Demand, or the CTI activity record itself. This is referred to as to as a screen pop. (For an activity screen pop, the channel type information is also required.)

During the interaction, the agent can navigate the Oracle CRM On Demand UI to find related information relevant to the interaction and maintain data on the interaction in the CTI activity record.

When the call center agent ends an interaction, Oracle CRM On Demand displays the wrap-up page so that the agent can enter notes from the interactions.

```
┌─────────────────────────────────────────────┐
│ ▪ Agent logs into CTI application           │
│ ▪ Agent logs into Oracle CRM On Demand      │
│ ▪ Agent puts himself into ready status on   │
│   CTI application                            │
└─────────────────────────────────────────────┘
                    │
                    ▼
┌─────────────────────────────────────────────┐
│ ▪ New incoming call comes in                │
│ ▪ Switch assigns incoming call to agent     │
│ ▪ Agent accepts the call                    │
└─────────────────────────────────────────────┘
                    │
                    ▼
```

Is the incoming call only to create a new SR?

Yes → Invoke Create Activity Web service with CreateServiceRequest parameter → Oracle CRM On Demand creates activity and service request, and returns ServiceRequest number created

No ↓

- CTI application invokes Create Activity
- Oracle CRM On Demand creates new activity
- Oracle CRM On Demand returns Record ID associated with the new activity to CTI application

CTI application determines which screen to pop using returned Record ID

Contact	Account	Lead	Opportunity	Service Request	Activity
Invoke CTI command servlet with Command = ScreenPop, Record ID, and Record Type = Contact	Invoke CTI command servlet with Command = ScreenPop, Record ID, and Record Type = Account	Invoke CTI command servlet with Command = ScreenPop, Record ID, and Record Type = Lead	Invoke CTI command servlet with Command = ScreenPop, Record ID, and Record Type = Opportunity	Invoke CTI command servlet with Command = ScreenPop, Record ID, and Record Type = Service Request	Invoke CTI command servlet with Command = ScreenPop, Record ID, and Record Type = Activity

- Agent answers call
- Oracle CRM On Demand loads screen pop for agent
- Agent talks to customer and resolves the customer's issue
- Agent hangs up phone

CTI application performs wrap up by invoking the CTI Command servlet with Command = WrapUp and also including the Interaction ID and Agent Offer Time created at the beginning of the call → End

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Message Flow between the CTI Client Application and Oracle CRM On Demand

The following figure illustrates the message flow between the CTI client application and Oracle CRM On Demand:
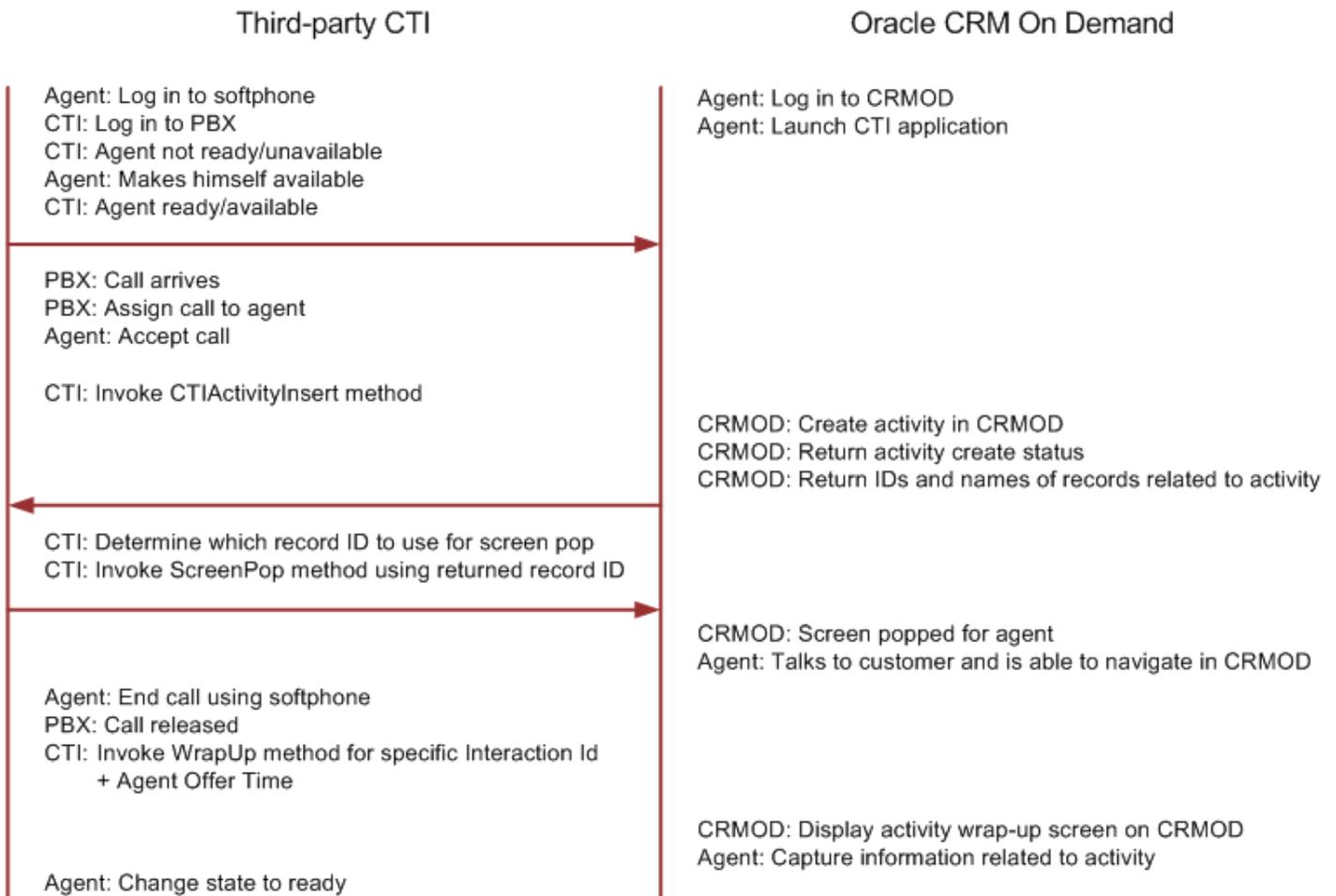
Record Association Logic

When a CTI client application invokes the CreateActivityInsert Web service method, Oracle CRM On Demand creates CTI activities and automatically associates related records in Oracle CRM On Demand with the interaction. For example, if someone calls from the phone number 111-555-1212, and a contact record in Oracle CRM On Demand exists with the same phone number, that contact record is associated with the call activity record. The CTI client application can display a screen pop for the associated record as required.

The record association logic attempts to associate records in three different ways:

- **Passed in record**. The record passed in is an explicit record to associate with the activity. This mechanism is used in Click-to-Dial links to ensure that outbound calls initiated from Click-to-Dial links always associate the record whose phone number was clicked with the outbound call activity record.

- **IVR**. The caller specifies information about the interaction that is used to associate related records. Examples of information include: contact phone number, service request number, campaign source code.

- **ANI/DNIS**. Using automatic number identification (ANI) and dialed number identification service (DNIS) search, the caller's origin or destination phone number or email address is used to associate related records:

  - **Inbound calls/voicemail**. Origin phone number used.

  - **Outbound calls**. Destination phone number used.

  - **Emails**. Origin email address used.

  - **Chats**. Origin phone number or origin email address used.

The following table shows how these three types of association relate to parameters of CTIActivityInsert. For more information about these parameters, see *CTIActivityInsert Interaction Input Parameters*.

Association Type	API Parameters and How they are Used in a SOAP Request

Passed in record	AssociatedRecordType and AssociatedRecordId:
	
	`<data:AssociatedRecordType>Contact</data:AssociatedRecordType>`
	`<data:AssociatedRecordId>1-G4ZB3</data:AssociatedRecordId>`

IVR	ContactPhoneNumber, CampaignSourceCode, and ServiceRequestNumber:
	
	`<data:ContactPhoneNumber>16505550199</data:ContactPhoneNumber>`
	`<data:CampaignSourceCode>123</data:CampaignSourceCode>`
	`<data:ServiceRequestNumber>80714-47523042</data:ServiceRequestNumber>`

ANI/DNIS	Origin and Destination:
	
	`<data:Origin>0016505550199</data:Origin>`
	`<data:Origin>xyz@abc.com</data:Origin>`
	`<data:Destination>16505550199</data:Destination>`

The record association priority from highest to lowest is as follows:

- Passed in record association
- IVR search result association
- ANI/DNIS search result association

This record association priority means that:

- The passed in associated record overwrites the associated record found in IVR search. For example, if Contact A is passed in as an associated record, and Contact B's phone number is passed in as an IVR value, Contact A is associated with the new activity.

- The associated record found in an IVR search overwrites the associated record found in ANI/DNIS search. For example, if Contact A's phone number is passed in as an IVR value, and the origin number matched Contact B's phone number, Contact A is associated with the new activity.

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- The passed in associated record overwrites the associated record found in ANI/DNIS search. For example, if Contact A is passed in as an associated record, and Contact B's phone number matched the origin number, Contact A is associated with the new activity.

The CTIActivityInsert method returns a suggested screen pop record type, according to the following priority order:

1. Service request
2. Campaign
3. Contact
4. Lead
5. Account
6. Activity

This suggested record type, together with other record associations returned, allows the CTI client application to choose the record for the screen pop.

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3 CTI Integration APIs

CTI Integration APIs

This chapter details the application programming interfaces (API) used for CTI integration. It contains the following topics:

- *Infrastructure Supporting CTI Integration*
- *CTI Activity Web Service*
- *CTICommand Servlet API*
- *ScreenPop Command*
- *WrapUp Command*

Infrastructure Supporting CTI Integration

Oracle CRM On Demand provides the infrastructure shown in the following table to support computer telephony integration (CTI):

Task	Oracle CRM On Demand Infrastructure
Creating an activity	CTIActivityInsert Web service method.
Loading a screen pop	CTICommand servlet (Command=ScreenPop), which automatically loads an Oracle CRM On Demand detail page.
Wrapping up	CTICommand servlet (Command=WrapUp), which automatically loads the Wrap-up edit page.
Wrapping up	CTIActivityWrapUp Web service method. This method does not allow the caller to set wrap-up notes. The method is useful for wrapping up an interaction in which the CTI application does not want to prompt the user for information. However, if the interaction has been wrapped up with the CTICommand servlet WrapUp command, a call to the CTIActivityWrapUp method is redundant.
Viewing current interactions	Communications tab containing homepages for each channel: Call, Chat, Email, Voicemail.
Performing CTI actions	UI controls, including buttons, for example, to open email, listen to voicemail, and Click-to-Dial links

The Create Activity Web service and the CTICommand servlet are described in the following topics.

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CTI Activity Web Service

CTI activities are created using the CTI Activity Web service in Oracle CRM On Demand.

The CTI Activity Web service:

- Is a stateless Web service, therefore user credentials must always be passed in the SOAP header in the WSSE UsernameToken token in the Username and Password parameters. For an example of a SOAP request, see *CTIActivityInsert SOAP Request*.

- Requires the agent to be provisioned for CTI. To issue CTIActivityInsert requests, the appropriate privileges for accessing call, chat, email, or voicemail communications are required. For more information about necessary privileges, see *CTI Role Privileges*.

- Uses the CTIActivity WSDL file, which is only available from the Web Services Administration page in Oracle CRM On Demand, if the user has the Manage CTI On Demand Access privilege. For a listing of the WSDL file, see *CTI Activity Web Services Description Language File*.

- Has two methods, the CTIActivityInsert method and the CTIActivityWrapUp method.

The CTIActivityInsert method of the CTI Activity Web service creates one or more CTI activities in Oracle CRM On Demand, and returns details on the activity, including information about records related to the activity.

The CTIActivityWrapUp method of the CTIActivity Web service automatically performs wrap-up on multiple CTI activities in Oracle CRM On Demand.

CTIActivityInsert Interaction Input Parameters

The CTIActivityInsert method accepts the input parameters shown in the following table.

In a SOAP request, the parameters are supplied in the list of Interaction XML nodes. A maximum of five interactions can be specified in a single request.

The parameter names for the Web service (for example, ChannelType) have no spaces, whereas the equivalent parameters names for the CTICommand servlet have spaces (for example, Channel Type).

The various types for the input parameters (as shown in the Type column of the following table) are listed in the second table in this topic. For the String type, the string length limit is also shown.

Parameter	Required	Type	Description
AgentOfferTime	Yes	Date-Time	The time that the interaction is offered to an agent (also known as System Offer Time). It is used like a default value for other parameters, like IVRBeginTime and QueueBeginTime. AgentOfferTime is also used as a primary key for differentiating activity records with the same InteractionId. This value originates from CTI.
AssociatedRecordId*	No	String (100)	The ID of a record to associate with the interaction's activity. If the ID does not correspond to a record in Oracle CRM On Demand, the activity is still created and no error is returned.

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Parameter	Required	Type	Description
AssociatedRecordType*	No	Record Type LOV	The type of record provided in the parameter AssociatedRecordId parameter. Any record provided in the AssociatedRecordId/Type parameters takes precedence over records that may be matched to the activity through other means, including Origin/ Destination (automatic number identification/ dialed number identification service) or record-specific parameters like ServiceRequestNumber, AssociatedRecordType, and AssociatedRecordId are used with the Click-to-Dial functionality.
CampaignSourceCode #	No	String (100)	The source code of an associated campaign record. If the value does not correspond to a record in Oracle CRM On Demand, the activity is still created and no error is returned.
ChannelType	Yes	LOV	The channel type, equivalent to the activity subtype. The possible values are as follows. (The values shown in parentheses are automatically set in the Type field for the activity.) • Inbound Call (Call) • Outbound Call (Call) • Inbound Transfer (Call) • Outbound Transfer (Call) • Missed Transfer (Call) • Predictive Call (Call) • Predictive Transfer (Call) • Preview Call (Call) • Preview Transfer (Call) • DID/Direct Call (Call) • Inbound Email (Email) • Outbound Email (Email) • Forwarded Email (Email) • Reassigned Email (Email) • Email Response (Email) • Inbound Voicemail (Voicemail) • Forwarded Voicemail (Voicemail) • Reassigned Voicemail (Voicemail) • Callback (Callback) • Web Callback (Callback) • Inbound Chat (Chat) • Chat Transfer (Chat)
ContactPhoneNumber #	No	String (100)	The home telephone number for the contact associated with the activity.

Parameter	Required	Type	Description
			If the value does not correspond to a record in Oracle CRM On Demand, the activity is still created and no error is returned.
CreateServiceRequest	No	Boolean	For activity creation only, whether a service request (SR) should be created and associated with the newly created activity.
			The associated account and contact of the activity will be associated with this SR. If ServiceRequestNumber is specified or AssociatedRecordType is Service Request, CreateServiceRequest is ignored.
Destination	No	String (100)	For calls and voicemails only, the number that was dialed to initiate the call. For an incoming call, this is the number that the customer dialed to reach the agent. For an outgoing call, it is the number the agent dialed. The country code must be prepended to the start of the value.
			For email activities only, the address to which the email was sent.
			For chat, either a phone number or an email address.
InteractionId	Yes	String (30)	Part of the primary key of the activity, together with AgentOfferTime.
IVRBeginTime	No	Date-Time	For calls and voicemails only, the time that the call is picked up by the interactive voice response (IVR).
Origin	No	Date-Time	For calls and voicemails only, the phone number of the person originating the call, that is, the caller ID or automatic number identification (ANI) number. The country code must be prepended to the start of the value.
			For email activities only, the From address of the original email.
			For chat, either a phone number or an email address.
Priority	No	LOV	The priority level of the activity. The following are the default values, but this list can be modified and expanded through Oracle CRM On Demand configuration.
			• 1-High
			• 2-Medium
			• 3-Low
			Invalid priority values are ignored.

Parameter	Required	Type	Description
Queue	No	String (250)	The queue to which the automatic call distributor (ACD) routed the message.
QueueBeginTime	No	Date-Time	For calls and voicemails, this is the time after the user interacts with the IVR at which the call is put into a queue for an agent to pick up. For email activities only, this is the time that the email is retrieved from the POP server and put into a queue.
ServiceRequestNumber #	No	String (100)	The number of the service request associated with the activity. If the value does not correspond to a record in Oracle CRM On Demand, the activity is still created and no error is returned.

In the above table, the parameters marked with an asterisk (*) character are used for the Click-to-Dial functionality. If Click-to-Dial is enabled, phone numbers on an Oracle CRM On Demand page have HTML attributes describing the page's record type and ID. If the parameters are set with those attribute values, the activity is associated with that record. For more information, see *Click-to-Dial Links*.

In the above table, the parameters marked with a number sign (#) character can be a passed in values from an IVR variable. For example, the caller may enter his or her phone number, campaign code, or SR number when prompted.

The various types for the input parameters (as shown in the Type column of the above table) are as follows:

Type	Format	Example
Boolean	A value of true or 1 specifies true. All other values are interpreted as false.	true
Date-Time	A UNIX epoch time, that is, the number of seconds elapsed since midnight UTC on January 1, 1970.	1293235200 (Midnight UTC on 25th December 2010)
LOV	A list of values. The possible values for a parameter are listed in the Description column in the above table.	Inbound Call (for the ChannelType parameter)
Record Type LOV	List of values corresponding to record types supported by CTI: • Account • Activity • Campaign • Contact • Lead • Service Request	Service Request

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Type	Format	Example
	Opportunity is also a supported record type for the parameter AssociatedRecordType, but the parameter ScreenPopRecordType does not return Opportunity.	
String	A string with the length limit specified in parentheses. For example, InteractionId, String (30), has a 30 character length limit.	4259480586

CTIActivityInsert Interaction Output Parameters

The output parameters for the CTIActivityInsert method are shown in the following table.

The Status parameter is always returned, and indicates whether the activity creation was successful.

If the value of the Status parameter is OK or `Activity already exists`, the ActivityId is always returned.

If the value of the Status parameter is OK and the created activity is associated with other records, the records IDs and other record information are returned (for example, ContactId and ContactFullName).

The various types for the output parameters (as shown in the Type column of the following table) are listed in the second table in *CTIActivityInsert Interaction Input Parameters*.

Parameter Name	Type	Description
AccountId	String	The ID of the account record associated with the activity.
AccountName	String	The name of the account record associated with the activity.
ActivityId	String	The ID of the activity created, or the activity that already existed.
AgentOfferTime	Date-time	The same as for the AgentOfferTime input argument. The time that the interaction is offered to an agent (also known as System Offer Time). It is used like a default value for other parameters, like IVRBeginTime and QueueBeginTime. AgentOfferTime is also used as a primary key for differentiating activity records with the same InteractionId.
CampaignId	String	The ID of the campaign record associated with the activity.
CampaignName	String	The name of the campaign associated with the activity.

Parameter Name	Type	Description
ContactFullName	String	The full name of the contact associated with the activity.
ContactId	String	The ID of the contact record associated with the activity.
InteractionId	String	Part of the primary key of the activity, together with AgentOfferTime.
LeadFullName	String	The full name of the lead associated with the activity.
LeadId	String	The ID of the lead associated with the activity.
ScreenPopRecordId	String	The record ID of the screen pop record.
ScreenPopRecordType	Record Type LOV	The suggested record type for the screen pop record. The suggestion is based on the following priority order: • Service Request • Campaign • Contact • Lead • Account • Activity For example, if the activity is associated with both a contact and an account, Contact is returned because that record type is higher in the priority list. The suggestion, together with the record associations returned, allows third-party vendors to choose the record type for the screen pop.
ServiceRequestId	String	The ID of the service request record associated with the activity.
ServiceRequestNumber	String	The number of the service request associated with the activity.
Status	String	The status of the activity. This can have the following values: • `OK.` The activity was created successfully. • `Activity already exists.` An activity was created for this interaction before the request.

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Parameter Name	Type	Description
		• **Unable to create activity.** It was not possible to create the activity. • **Error.** There is an error. These values are always returned in English, regardless of the user's locale. If there is an exception, an error message (see *Exception Messages*) is returned, and this may be translated.

CTIActivityInsert SOAP Request

The following is a sample SOAP request to create four activities; one each for call, chat, email and voicemail:

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/" xmlns:cti="urn:crmondemand/
ws/odctibs/ctiactivity/" xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-
secext-1.0.xsd" xmlns:data="urn:/crmondemand/xml/ctiactivity/data">

<soapenv:Header>

 <wsse:Security soapenv:mustUnderstand="1">

 <wsse:UsernameToken>

 <wsse:Username>OKP/mos.def</wsse:Username>

 <wsse:Password Type="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-username-token-
profile-1.0#PasswordText">password</wsse:Password>

 </wsse:UsernameToken>

 </wsse:Security>

</soapenv:Header>

<soapenv:Body>

 <cti:CTIActivityInsert_Input>

 <data:ListOfInteraction>

 <data:Interaction>

 <data:InteractionId>900000000051</data:InteractionId>

 <data:AgentOfferTime>1287786900</data:AgentOfferTime>

 <data:ChannelType>Inbound Call</data:ChannelType>

 <data:Origin>15551111212</data:Origin>

 <data:Destination>18003849503</data:Destination>

 <data:Priority>2-Medium</data:Priority>

 <data:IVRBeginTime>1287786601</data:IVRBeginTime>

 <data:QueueBeginTime>1287786213</data:QueueBeginTime>
```

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```xml
<data:Queue>Support</data:Queue>

</data:Interaction>

<data:Interaction>

<data:InteractionId>9000000000054</data:InteractionId>

<data:AgentOfferTime>1287786900</data:AgentOfferTime>

<data:ChannelType>Inbound Chat</data:ChannelType>

<data:Origin>jsoap@match.com</data:Origin>

<data:Destination>cti@testing.com</data:Destination>

<data:Priority>2-Medium</data:Priority>

<data:IVRBeginTime>1287786601</data:IVRBeginTime>

<data:QueueBeginTime>1287786213</data:QueueBeginTime>

<data:Queue>Support</data:Queue>

</data:Interaction>

<data:Interaction>

<data:InteractionId>900000000053</data:InteractionId>

<data:AgentOfferTime>1287786900</data:AgentOfferTime>

<data:ChannelType>Inbound Email</data:ChannelType>

<data:Origin>jsoap@match.com</data:Origin>

<data:Destination>cti@testing.com</data:Destination>

<data:Priority>2-Medium</data:Priority>

<data:IVRBeginTime>1287786601</data:IVRBeginTime>

<data:QueueBeginTime>1287786213</data:QueueBeginTime>

<data:Queue>Support</data:Queue>

</data:Interaction>

<data:Interaction>

<data:InteractionId>900000000055</data:InteractionId>

<data:AgentOfferTime>1287786900</data:AgentOfferTime>

<data:ChannelType>Inbound Voicemail</data:ChannelType>

<data:Origin>15551111212</data:Origin>

<data:Destination>18003849503</data:Destination>

<data:Priority>2-Medium</data:Priority>

<data:IVRBeginTime>1287786601</data:IVRBeginTime>

<data:QueueBeginTime>1287786213</data:QueueBeginTime>
```

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```
        <data:Queue>Support</data:Queue>

    </data:Interaction>

    </data:ListOfInteraction>

    </cti:CTIActivityInsert_Input>

</soapenv:Body>

</soapenv:Envelope>
```

CTIActivityInsert SOAP Response

The following is the SOAP response for the request shown in *CTIActivityInsert SOAP Request*.

```
<env:Envelope xmlns:env="http://schemas.xmlsoap.org/soap/envelope/" xmlns:xsd="http://www.w3.org/2001/
XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:ns0="urn:crmondemand/ws/odctibs/
ctiactivity/" xmlns:ns1="urn:/crmondemand/xml/ctiactivity/data">

<env:Header>

 <wsse:Security env:mustUnderstand="1" xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-
wss-wssecurity-secext-1.0.xsd" xmlns="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-
secext-1.0.xsd"/>

</env:Header>

<env:Body>

<ns0:CTIActivityInsert_Output>

<ns1:ListOfActivity>

 <ns1:Activity>

 <ns1:Status>OK</ns1:Status>

 <ns1:InteractionId>900000000051</ns1:InteractionId>

 <ns1:AgentOfferTime>1287786900</ns1:AgentOfferTime>

 <ns1:ActivityId>1QA2-S78VL</ns1:ActivityId>

 <ns1:ContactId>1QA2-RXQQC</ns1:ContactId>

 <ns1:ContactFullName>Fred Hong</ns1:ContactFullName>

 <ns1:ScreenPopRecordId>1QA2-RXQQC</ns1:ScreenPopRecordId>

 <ns1:ScreenPopRecordType>Contact</ns1:ScreenPopRecordType>

 </ns1:Activity>

 <ns1:Activity>

 <ns1:Status>OK</ns1:Status>

 <ns1:InteractionId>9000000000054</ns1:InteractionId>

 <ns1:AgentOfferTime>1287786900</ns1:AgentOfferTime>
```

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```
        <ns1:ActivityId>1QA2-S78VO</ns1:ActivityId>

        <ns1:ScreenPopRecordId>1QA2-S78VO</ns1:ScreenPopRecordId>

        <ns1:ScreenPopRecordType>Activity</ns1:ScreenPopRecordType>

        </ns1:Activity>

        <ns1:Activity>

        <ns1:Status>OK</ns1:Status>

        <ns1:InteractionId>900000000053</ns1:InteractionId>

        <ns1:AgentOfferTime>1287786900</ns1:AgentOfferTime>

        <ns1:ActivityId>1QA2-S78VQ</ns1:ActivityId>

        <ns1:ScreenPopRecordId>1QA2-S78VQ</ns1:ScreenPopRecordId>

        <ns1:ScreenPopRecordType>Activity</ns1:ScreenPopRecordType>

        </ns1:Activity>

        <ns1:Activity>

        <ns1:Status>OK</ns1:Status>

        <ns1:InteractionId>900000000055</ns1:InteractionId>

        <ns1:AgentOfferTime>1287786900</ns1:AgentOfferTime>

        <ns1:ActivityId>1QA2-S78VS</ns1:ActivityId>

        <ns1:ContactId>1QA2-RXQQC</ns1:ContactId>

        <ns1:ContactFullName>Fred Hong</ns1:ContactFullName>

        <ns1:ScreenPopRecordId>1QA2-RXQQC</ns1:ScreenPopRecordId>

        <ns1:ScreenPopRecordType>Contact</ns1:ScreenPopRecordType>

        </ns1:Activity>

    </ns1:ListOfActivity>

    </ns0:CTIActivityInsert_Output>

    </env:Body>

    </env:Envelope>
```

CTIActivityWrapUp Input Parameters

The CTIActivityWrapUp method accepts the input parameters shown in the following table.

In a SOAP request, the parameters are supplied in the list of Interaction XML nodes. A maximum of five interactions can be specified in a single request.

Parameter	Required	Type	Description
AgentOfferTime	Yes	Date-Time	The time that the interaction is offered to an agent. AgentOfferTime is also used as a primary key for differentiating activity records with the same InteractionId.
ChannelType	Yes	LOV	The channel type, equivalent to the activity subtype. The possible values are as listed in the first table in *CTIActivityInsert Interaction Input Parameters*.
InteractionId	Yes	String (30)	Part of the primary key of the activity, together with AgentOfferTime

CTIActivityWrapUp Output Parameters

The output parameters for the CTIActivityWrapUp method are shown in the following table.

The Status parameter is always returned, and indicates whether the activity wrap-up was successful.

Parameter Name	Type	Description
AgentOfferTime	Date-time	The same as for the AgentOfferTime input argument.
InteractionId	String	Part of the primary key of the activity, together with AgentOfferTime.
Status	String	The status of the activity. This can have the following values: • **OK.** The request was processed successfully. • **Activity has already been wrapped up.** The activity has already been wrapped up before the request. • **Activity not found.** Self explanatory. • **Multiple activites found.** Self explanatory. • **Error.** There is an error. These values are always returned in English, regardless of the user's locale. If there was an exception, an error message (see *Exception Messages*) is returned, and this may be translated.

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Parameter Name	Type	Description

CTIActivityWrapUp SOAP Request

The following is a sample SOAP request to wrap up four activities; one each for call, chat, email and voicemail:

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/" xmlns:cti="urn:crmondemand/
ws/odctibs/ctiactivity/" xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-
secext-1.0.xsd" xmlns:data="urn:/crmondemand/xml/ctiactivity/data">

 <soapenv:Header>

 <wsse:Security soapenv:mustUnderstand="1">

 <wsse:UsernameToken>

 <wsse:Username>OKP/mos.def</wsse:Username>
 <wsse:Password Type="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-username-token-
profile-1.0#PasswordText">password</wsse:Password>

 </wsse:UsernameToken>

 </wsse:Security>

 </soapenv:Header>

<soapenv:Body>

<cti:CTIActivityWrapUp_Input>

<data:ListOfInteraction>

 <data:Interaction>

 <data:InteractionId>100000000000</data:InteractionId>

 <data:AgentOfferTime>1287786900</data:AgentOfferTime>

 <data:ChannelType>Inbound Call</data:ChannelType>

 </data:Interaction>

 <data:Interaction>

 <data:InteractionId>100000000001</data:InteractionId>

 <data:AgentOfferTime>1287786900</data:AgentOfferTime>

 <data:ChannelType>Inbound Chat</data:ChannelType>

 </data:Interaction>

 <data:Interaction>

 <data:InteractionId>100000000002</data:InteractionId>

 <data:AgentOfferTime>1287786900</data:AgentOfferTime>

 <data:ChannelType>Inbound Email</data:ChannelType>
```

```
    </data:Interaction>

    <data:Interaction>

    <data:InteractionId>100000000003</data:InteractionId>

    <data:AgentOfferTime>1287786900</data:AgentOfferTime>

    <data:ChannelType>Inbound Voicemail</data:ChannelType>

    </data:Interaction>

  </data:ListOfInteraction>

  </cti:CTIActivityWrapUp_Input>

  </soapenv:Body>

  </soapenv:Envelope>
```

CTIActivityWrapUp SOAP Response

The following is the SOAP response for the request shown in *CTIActivityWrapUp SOAP Request*.

```
<env:Envelope xmlns:env="http://schemas.xmlsoap.org/soap/envelope/" xmlns:xsd="http://www.w3.org/2001/
XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:ns0="urn:crmondemand/ws/odctibs/
ctiactivity/" xmlns:ns1="urn:/crmondemand/xml/ctiactivity/data">

<env:Header>

 <wsse:Security env:mustUnderstand="1" xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-
wss-wssecurity-secext-1.0.xsd" xmlns="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-
secext-1.0.xsd"/>

</env:Header>

<env:Body>

<ns0:CTIActivityWrapUp_Output>

<ns1:ListOfActivity>

 <ns1:Activity>

 <ns1:Status>OK</ns1:Status>

 <ns1:InteractionId>100000000000</ns1:InteractionId>

 <ns1:AgentOfferTime>1287786900</ns1:AgentOfferTime>

 </ns1:Activity>

 <ns1:Activity>

 <ns1:Status>OK</ns1:Status>

 <ns1:InteractionId>100000000001</ns1:InteractionId>

 <ns1:AgentOfferTime>1287786900</ns1:AgentOfferTime>

 </ns1:Activity>
```

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```
    <ns1:Activity>

    <ns1:Status>OK</ns1:Status>

    <ns1:InteractionId>100000000002</ns1:InteractionId>

    <ns1:AgentOfferTime>1287786900</ns1:AgentOfferTime>

    </ns1:Activity>

    <ns1:Activity>

    <ns1:Status>OK</ns1:Status>

    <ns1:InteractionId>100000000003</ns1:InteractionId>

    <ns1:AgentOfferTime>1287786900</ns1:AgentOfferTime>

    </ns1:Activity>

    </ns1:ListOfActivity>

    </ns0:CTIActivityWrapUp_Output>

    </env:Body>

    </env:Envelope>
```

Exception Messages

The methods of the CTI Activity Web service can return exception error messages as shown in the following table.

Exception From	Translated?	Error message	Comments
Web services framework	No	The security token could not be authenticated or authorized.	Incorrect credentials were supplied
Web services framework	No	Missing <wsse:Security> in SOAP Header	No <Security> element in SOAP request
Web services framework	No	Policy requires authentication token	No <UserNameToken> element in SOAP request
Web services framework	No	Missing user name in security token	No <UserName> element in SOAP request
Web services framework	No	Missing password value	No <PassWord> element in SOAP request
Web services framework	No	Caught exception while handling request: invalid boolean value:	None

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Exception From	Translated?	Error message	Comments
Web services framework	No	Caught exception while handling request: expected element is missing:	None
CTI Activity Web service	Yes	Access Denied	None
CTI Activity Web service	Yes	Invalid value, VALUE, is specified for option OPTION	None
CTI Activity Web service	Yes	Request contains too many interactions	Maximum number of interactions is five.
Object Manager	Yes	'<field>FIELDNAME<field>' is a required field. Please enter a value for the field.(SBL-DAT-00498)	None
Object Manager	Yes	The Web Services Operations Allotment of LIMIT has been reached or there is insufficient capacity remaining to process your request.(SBL-SBL-70172)	There is a similar error message for each of the other Web services limiters

For more information about Web services limiters, see Oracle Web Services On Demand Guide and Oracle CRM On Demand Online Help.

CTICommand Servlet API

The CTI application invokes the CTICommand servlet to load CTI content in Oracle CRM On Demand. This is a generic command servlet that can be used to load any Oracle CRM On Demand page.

Parameters are passed to the CTICommand servlet through HTTP POST or GET requests. As HTTP GET requests are supported, these parameters can be passed in through the URL query string. The URL has the format:

```
<CRMOD base URL>/user/CTICommand
```

Depending on the value of the Command parameter, the CTICommand servlet invokes screen pop or wrap-up functionality as described in the following topics. An example URL for HTTP GET to invoke a screen pop is as follows:

http://ezintegr4u.us.oracle.com/OnDemand/user/CTICommand?Command=ScreenPop&Record Type=Activity&Record Id=1QA2-S5YEX&Channel Type=Inbound Call

Note: It is not required to pass user credentials to the CTICommand servlet, as is the case for the CTI Activity Web service. This is because the CTICommand servlet uses the credentials from the existing Oracle CRM On Demand browser session.

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ScreenPop Command

The CTI screen pop functionality loads the detail page of a record associated with the agent's current call center interaction. For example, if a customer calls in with the phone number 1-555-111-1212, and a corresponding contact record in Oracle CRM On Demand has the same phone number, the CTI screen pop functionality loads that contact's detail page in Oracle CRM On Demand so that the call center agent has information on the caller.

Message Protocol

The CTICommand servlet is used to invoke the CTI screen pop functionality, and the value of the Command parameter in this case is ScreenPop.

The parameters shown in the following table are supported for the ScreenPop command.

Parameter Name	Required	Type	Description
Channel Type	No (Yes, if Record Type = Activity)	LOV	When specifying the following LOV subtype values, the type value in parentheses is automatically set. • Inbound Call (Call) • Outbound Call (Call) • Inbound Transfer (Call) • Outbound Transfer (Call) • Missed Transfer (Call) • Predictive Call (Call) • Predictive Transfer (Call) • Preview Transfer (Call) • Preview Call (Call) • DID/Direct Call (Call) • Callback (Callback) • Web Callback (Callback) • Inbound Chat (Chat) • Chat Transfer (Chat) • Inbound Email (Email) • Outbound Email (Email • Forwarded Email (Email • Reassigned Email (Email) • Email Response (Email • Inbound Voicemail (Voicemail) • Forwarded Voicemail (Voicemail) • Reassigned Voicemail (Voicemail)

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Parameter Name	Required	Type	Description
Command	Yes	LOV	The value in this case is ScreenPop.
Record Id	Yes	String	The record ID of the record used for the screen pop.
Record Type	Yes	Record Type LOV	The record type for the screen pop. Possible values are: • Service Request • Contact • Account • Lead • Opportunity • Campaign • Activity

Example of Contact ScreenPop Command

In this example, when an interaction comes in, the activity is created in Oracle CRM On Demand, which finds a related contact record. The CTI client application might load that contact record in Oracle CRM On Demand using the parameters in the following table. The Record Id and Record Type are returned by the call to CTIActivityInsert.

Parameter	Value Example
Command	ScreenPop
Record Id	1QA2-D903L00
Record Type	Contact

Example of Activity ScreenPop Command

For loading a screen pop for an activity, the Channel Type parameter must be provided with the same value sent in the CTIActivityInsert request. In this case, the parameters are as shown in the following table:

Parameter	Value Example
Channel Type	Inbound Voicemail

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Parameter	Value Example
Command	ScreenPop
Record Id	1QA2-D903189
Record Type	Activity

WrapUp Command

The WrapUp command displays the activity wrap-up page in Oracle CRM On Demand. The wrap-up page is basically an activity edit page with a special applet layout. Before the wrap-up page can be displayed, a CTI activity must be created.

Message Protocol

The CTICommand servlet is used to invoke the CTI wrap-up functionality and the value of the Command parameter in this case is WrapUp.

The parameters shown in the following table are supported for the WrapUp command.

Parameter Name	Required	Type	Description
Agent Offer Time	Yes	Date/Time	The time that the interaction is offered to an agent (also known as System Offer Time). Agent Offer Time is also used as a primary key for differentiating activity records with the same InteractionId.
Command	Yes	LOV	The value in this case is WrapUp.
Interaction Id	Yes	String	Part of the primary key of the activity, together with Agent Offer Time

Example of Call WrapUp Command

In this example, when an interaction has ended, the CTI client application triggers a wrap-up by passing in the following parameter name value pairs to the CTICommand servlet. The Agent Offer Time and Interaction Id must match the values passed in when creating the activity in Oracle CRM On Demand.

Parameter	Value Example
Agent Offer Time	1287786213

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Parameter	Value Example
Command	WrapUp
Interaction Id	90001841534038

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4 Tracking UI Events in the CTI Application

Tracking UI Events in the CTI Application

This chapter describes how Oracle CRM On Demand allows for the tracking of UI events by the computer telephony integration (CTI) application.

The chapter contains the following topics:

- *HTML Custom Attributes*
- *UI Controls*

HTML Custom Attributes

The CTI application is responsible for collecting particular UI event information from UI controls in the Oracle CRM On Demand browser window, and performing the associated CTI action. Some examples of UI events and actions are as follows:

- Clicking the Listen to Vmail button plays back the voicemail to the user through the CTI application.
- Clicking the Origin phone number dials that phone number.

> **Note:** If the CTI application cannot support a particular UI control, the UI control should be disabled using the appropriate setting in the Company Profile page. For more information, see *CTI Company Profile Settings*.

Oracle CRM On Demand provides attributes in the HTML elements for its UI controls that indicate the type of CTI method to invoke when the control is clicked. Additional attributes of the element can also provide name-value pairs that provide relevant data.

HTML custom attributes are fully supported in HTML5 and valid custom attributes are prefixed with `the data-characters`. (In versions of HTML before HTML5, custom attributes were an undocumented feature.)

Custom attributes are supported for the following browsers:

- Internet Explorer Version 6.0 and later
- Mozilla Firefox Version 2.0 and later
- Google Chrome (all versions)

The following table shows the custom attributes that are available and the data that they provide to the CTI application.

Attribute	CTI Data	Comments
data-cti-action	CTI operation to perform	Attribute values and the associated CTI actions are as follows: • **openVmail**. Open voicemail.

Attribute	CTI Data	Comments
		• **vmailOnPhone**. Play voicemail on agent's phone. • **reassignVmail**. Reassign voicemail. • **reassignEmail**. Reassign email. • **openEmail**. Open email. • **openChat**. Open chat. • **dial**. Dial phone number. • **promptToDial**. Prompt the user with a Click-to-Dial window. • **openHistory**. Open interaction history. • **endWrapUp**. End wrap-up for interaction.
data-cti-interactionId	CTI interaction Id	CTI assigned unique identifier.
data-cti-phone-number	CTI dialed number identification service (DNIS) number to dial	Oracle CRM On Demand deformatted phone number (that is, purely digits) to dial
data-cti-phone-countrycode	CTI DNIS country code	Oracle CRM On Demand phone number country code.
data-cti-crmod-recordtype	Oracle CRM On Demand record type	Used for Click-to-Dial. CTI sends this back to Oracle CRM On Demand so that the activity is associated with the correct record type.
data-cti-crmod-recordid	Oracle CRM On Demand record ID	Used for Click-to-Dial. CTI sends this back to Oracle CRM On Demand so that the activity is associated with the correct record.

UI Controls

This topic summarizes the Oracle CRM On Demand UI controls from which the CTI application can collect event information.

The following table shows on which detail pages in Oracle CRM On Demand the CTI UI buttons are located. Click-to-Dial links are available on all record type detail pages, lists, and child lists.

UI Button	Call Detail	Chat Detail	Email Detail	Vmail Detail
Listen to Vmail	No	No	No	Yes
Listen to Vmail on Phone	No	No	No	Yes
Reassign	No	No	Yes	Yes

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UI Button	Call Detail	Chat Detail	Email Detail	Vmail Detail
Open Email	No	No	Yes	No
View Chat	No	Yes	No	No
View Interaction History	Yes	Yes	Yes	Yes
Save	Yes	Yes	Yes	Yes

The following subtopics describe, for each UI control, the behavior triggered in the CTI application by the events associated with the UI controls. The CTI application is responsible for taking action on these events, for example, when the user initiates click-to-dial, or clicks a button. The HTML custom attributes for each UI control and an example of HTML are also shown.

The `custom attributes (data-*)` are added to the UI controls' HTML elements dynamically, after the UI is loaded.

Click-to-Dial Links

Clicking a phone number link in a record in the Oracle CRM On Demand UI provides HTML custom attributes that enable a CTI client application to dial the phone number and create an activity associated with the record whose link is clicked.

The values for the data- attributes are stored in the HTML element's id attribute and dynamically added to the element after the page is initially loaded. The HTML custom attributes for Click-to-Dial links are:

- data-cti-action="dial" or data-cti-action="promptToDial"
- data-cti-phone-number="phone number digits"
- data-cti-phone-countrycode="country code"
- data-cti-crmod-recordtype="record type"
- data-cti-crmod-recordid="record Id"

Note: On child lists on detail pages, the record type and record ID used are those of the child record.

The Display Click-to-Dial Popup check box in the My Profile page in Oracle CRM On Demand determines the value for the data-cti-action attribute. If the check box is selected, the value is `promptToDial`, specifying that the user is prompted with a Click-to-Dial popup before the phone number is dialed. If the check box is cleared, data-cti-action has the value `dial`.

The CTI application uses the information in the data- attributes and makes a CTIActivityInsert call to create an activity (with Type = Call, Subtype = Outbound Call) associated with the record. The following table shows how the HTML attributes for Click-to-Dial relate to CTIActivityInsert method parameters.

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data- Attribute	CTIActivityInsert Parameter	Mapping
data-cti-phone-countrycode	Destination	Destination = data-cti-phone-countrycode + data-cti-phone-number (for example, 16505550199)
data-cti-phone-number	Destination	Destination = data-cti-phone-countrycode + data-cti-phone-number (for example, 16505550199)
data-cti-crmod-recordtype	AssociatedRecordType	AssociatedRecordType = data-cti-crmod-recordtype
data-cti-crmod-recordid	AssociatedRecordId	AssociatedRecordId = data-cti-crmod-recordid

If the data-cti-crmod-recordtype value does not correspond to one of the record types supported by the AssociatedRecordType parameter, the CTIActivityInsert method simply ignores the associated record specified, and continues creating the activity record. It is up to the CTI application to decide whether to display a screen pop, based on the screen pop information returned by the CTIActivityInsert method.

Oracle CRM On Demand UI displays the wrap-up associated with the interaction.

An example of HTML for a click-to-dial link is as follows:

```
<td class="fv fvu" style="padding-left:6px" id="A0.R0.Work Phone &#35;">
<a class="nclk" id="CTIDialNumberId|true|6505550199|1|Contact|1-CVVZ0" href="javascript:void(0);" data-cti-
action="promptToDial"
 data-cti-phone-number="6505550199" data-cti-phone-countrycode="1" data-cti-crmod-recordtype="Contact"data-
cti-crmod-recordid="1-CVVZ0"
1(650)555-0199
</a></td>
```

Listen to Vmail Button

Clicking this button in the Oracle CRM On Demand UI plays back the interaction's voicemail message to the user.

The HTML custom attributes for the button are:

- data-cti-action="openVmail"
- data-cti-interactionId="interactionId"

An example of HTML for the button is as follows:

```
<td onmouseover="toggleNavButton(this);" onmouseout="toggleNavButton(this);"
 onkeypress="onButtonPress(this);"
tabindex="3" class="buttonTD" data-cti-action="openVmail" data-cti-interactionId="54065405406456450"
onclick="function () {return false;};" id="CODDetailVMForm25658904*3">
 Listen to Vmail </td>
```

Listen to Vmail on Phone Button

Clicking this button in the Oracle CRM On Demand UI plays back the interaction's voicemail message on the user's phone.

The HTML custom attributes for the button are:

- data-cti-action="vmailOnPhone"
- data-cti-interactionId="interactionId"

An example of HTML for the button is as follows:

```
<td onmouseover="toggleNavButton(this);" onmouseout="toggleNavButton(this);"
 onkeypress="onButtonPress(this);"
tabindex="3" class="buttonTD" data-cti-action="vmailOnPhone" data-cti-interactionId="54065405406456450"
onclick="function () {return false;};" id="CODDetailVMForm25658904*3">
 Listen to Vmail on Phone </td>
```

Reassign Button (Voicemail)

Clicking this button in the VMail Detail page in the Oracle CRM On Demand UI opens the voicemail reassign dialog in the CTI application.

The HTML custom attributes for the button are:

- data-cti-action="reassignVmail"
- data-cti-interactionId="interactionId"

An example of HTML for the button is as follows:

```
<td onmouseover="toggleNavButton(this);" onmouseout="toggleNavButton(this);"
 onkeypress="onButtonPress(this);"
onclick="function () {return false;};" tabindex="2" class="buttonTD" data-cti-action="reassignVmail" data-
cti-interactionId="21646540540654064" id="CODDetailVMForm7715170*2">
 Reassign </td>
```

Open Email Button

Clicking this button in the Oracle CRM On Demand UI opens the email transcript associated with the interaction.

The HTML custom attributes for the button are:

- data-cti-action="openEmail"
- data-cti-interactionId="interactionId"

An example of HTML for the button is as follows:

```
<td onmouseover="toggleNavButton(this);" onmouseout="toggleNavButton(this);"
 onkeypress="onButtonPress(this);"
onclick="function () {return false;};" tabindex="2" class="buttonTD" data-cti-action="openEmail" data-cti-
interactionId="21646540540654064" id="CODDetailEmailForm32883963*2">
 Open Email </td>
```

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Reassign Button (Email)

Clicking this button in the Email Detail page in the Oracle CRM On Demand UI opens the email reassign dialog in the CTI application.

The HTML custom attributes for the button are:

- data-cti-action="reassignEmail"
- data-cti-interactionId="interactionId"

An example of HTML for the button is as follows:

```
<td onmouseover="toggleNavButton(this);" onmouseout="toggleNavButton(this);"
 onkeypress="onButtonPress(this);"
onclick="function () {return false;};" tabindex="2" class="buttonTD" data-cti-action="reassignEmail" data-
cti-interactionId="21646540540654064" id="CODDetailEMForm7715170*2">
 Reassign </td>
```

View Chat Button

Clicking this button in the Oracle CRM On Demand UI opens the chat transcript associated with the interaction.

The HTML custom attributes for the button are:

- data-cti-action="openChat"
- data-cti-interactionId="interactionId"

An example of HTML for the button is as follows:

```
<td onmouseover="toggleNavButton(this);" onmouseout="toggleNavButton(this);"
onkeypress="onButtonPress(this);" onclick="function () {return false;};" tabindex="2" class="buttonTD" data-
cti-action="openChat" data-cti-interactionId="21646540540654064" id="CODDetailChatForm32883963*2">
 View Chat </td>
```

View Interaction History Button

Clicking this button in the Oracle CRM On Demand UI opens the interaction history dialog in the CTI application.

The HTML custom attributes for the button are:

- data-cti-action="openHistory"
- data-cti-interactionId="interactionId"

An example of HTML for the button is as follows:

```
<td onmouseover="toggleNavButton(this);" onmouseout="toggleNavButton(this);"
onkeypress="onButtonPress(this);" onclick="function () {return false;};" tabindex="2" class="buttonTD" data-
cti-action="openHistory" data-cti-interactionId="21646540540654064" id="CODDetailChatForm32883963*2">
 View Interaction History </td>
```

Save Button on Wrap Up Form

Clicking this button in the Oracle CRM On Demand UI ends the wrap-up for an interaction in the CTI application.

The HTML custom attributes for the button are:

- data-cti-action="endWrapUp"
- data-cti-interactionId="interactionId"

An example of HTML for the button is as follows:

```
<td onmouseover="toggleNavButton(this);" onmouseout="toggleNavButton(this);"
 onkeypress="onButtonPress(this);"
onclick="function () {return false;};" tabindex="2" class="buttonTD" data-cti-action="endWrapUp" data-cti-
interactionId="21646540540654064" id="CTIWrapUp_Save">
 Save </td>
```

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5 Configuring Oracle CRM On Demand for CTI Integration

Configuring Oracle CRM On Demand for CTI Integration

This chapter describes the configuration required in Oracle CRM On Demand to enable integration with a computer telephony integration (CTI) application. This chapter contains the following topics:

- *CTI Company Profile Settings*
- *CTI Role Privileges*
- *Required Settings to Make CTI Functionality Available*

CTI Company Profile Settings

The company profile settings listed in the following table are mainly for enabling and disabling the Oracle CRM On Demand UI controls associated with CTI.

Setting	Description
View Interaction History Enabled	Displays and enables the View Interaction History button on any Communication Activity detail page.
Listen to Voicemail Enabled	Displays and enables the Listen to Vmail button on the Voicemail Detail page.
Listen to Voicemail on Phone Enabled	Displays and enables the Listen to Vmail on Phone button on the Voicemail Detail page.
Reassign Voicemail Enabled	Displays and enables the Reassign button on the Voicemail Detail page.
Open Email Enable	Displays and enables the Open Email button on the Email Detail page.
Reassign Email Enabled	Displays and enables the Reassign button on the Email Detail page.
View Chat Enabled	Displays and enables the View Chat button on the Chat Detail page.
Click To Dial Enabled	If selected, (and the Access Call Communications privilege is enabled), all phone numbers in Oracle CRM On Demand are displayed as hyperlinks, allowing you to click the hyperlink to place a call to that number.

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CTI Role Privileges

The CTI Role Privileges control which channels are enabled for the user.

To allow users access to CTI activity creation, screen pop, and wrap-up, one of the Access <Channel> Communications privileges (see the following table) must be enabled for the user's role. If a user does not have the appropriate privilege for a channel, an Access Denied error is returned.

Privilege	Description
Access Call Communications	Provides access to the Call subtab under the Communications tab. Allows the creation of call activity records.
Access Chat Communications	Provides access to the Chat subtab under the Communications tab. Allows the creation of chat activity records.
Access Email Communications	Provides access to the Email subtab under the Communications tab. Allows the creation of email activity records.
Access Voicemail Communications	Provides access to the Voicemail subtab under the Communications tab. Allows the creation of voicemail activity records.
Manage CTI On Demand Access	Provides a grant privilege allowing company administrators to view this privilege, as well as the other privileges. This privilege also determines whether the CTI Activity WSDL file can be downloaded from the Web Services Administration page, and whether the CTI Company Profile settings are visible on the Company Profile page in Oracle CRM On Demand.

Required Settings to Make CTI Functionality Available

The following table lists the privileges and CTI Company profile settings necessary to provide access to different types of CTI functionality listed in the Type and Functionality columns.

The following columns indicate privileges:

- **Call**. Access Call Communications privilege.
- **Chat**. Access Chat Communications privilege.
- **Email**. Access Email Communications privilege.
- **Vmail**. Access Voicemail Communications privilege.
- **Grant**. Manage CTI On Demand Access privilege.

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The following column indicates company profile settings:

- **Check Box**. One of the settings that enables or disables a UI control, for example, the Listen to Voicemail Enabled setting.

For example, for the Listen to Vmail button to appear, you must select the corresponding check box, Listen to Voicemail Enabled, on the Company Profile page.

> **Note:** In the table, Group indicates members of a group of settings, one of which must be set to enable the CTI functionality in that row. For example, for the Communications tab to appear in the list of Available tabs, you must enable one of the CTI channel privileges (Call, Chat, Email, or Voicemail).

		Whether privilege is required					
Type	Functionality	Call	Chat	Email	Vmail	Grant	Check Box
Available tabs	Communication	Group				No	No
Button	Listen to Voicemail	No	No	No	No	No	Yes
Button	Listen to Voicemail on Phone	No	No	No	No	No	Yes
Button	Open Email	No	No	No	No	No	Yes
Button	Reassign Email	No	No	No	No	No	Yes
Button	Reassign Voicemail	No	No	No	No	No	Yes
Button	View Chat	No	No	No	No	No	Yes
Button	View Interaction History	No	No	No	No	No	Yes
Web service call	Create or wrap up Call activity	Yes	No	No	No	No	No
Web service call	Create or wrap up Chat activity	No	Yes	No	No	No	No
Web service call	Create or wrap up Email activity	No	No	Yes	No	No	No
Web service call	Create or wrap up Vmail activity	No	No	No	Yes	No	No

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		Whether privilege is required					
Type	Functionality	Call	Chat	Email	Vmail	Grant	Check Box
WSDL file	CTI Activity WSDL	No	No	No	No	Yes	No
Command	ScreenPop	Group				No	No
Command	WrapUp	Group				No	No
Detail page	Call	Group				No	No
Detail page	Chat	Group				No	No
Detail page	Email	Group				No	No
Detail page	Voicemail	Group				No	No
Privileges	CTI privileges in company Admin	No	No	No	No	Yes	No
Subtab	Call	Yes	No	No	No	No	No
Subtab	Chat	No	Yes	No	No	No	No
Subtab	Email	No	No	Yes	No	No	No
Subtab	Voicemail	No	No	No	Yes	No	No
Tab	Communication	Group				No	No
UI	Click-to-dial	Yes	No	No	No	No	Yes

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6 CTI Activity Web Services Description Language File

CTI Activity Web Services Description Language File

This appendix lists the WSDL file for the CTI Activity Web service:

```
<?xml version="1.0" encoding="UTF-8" ?>

<definitions targetNamespace="urn:crmondemand/ws/odctibs/ctiactivity/"

 xmlns="http://schemas.xmlsoap.org/wsdl/"

 xmlns:tns="urn:crmondemand/ws/odctibs/ctiactivity/"

 xmlns:soapenc="http://schemas.xmlsoap.org/soap/encoding/"

 xmlns:xsd="http://www.w3.org/2001/XMLSchema"

 xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/"

 xmlns:apData="urn:/crmondemand/xml/ctiactivity/data">

<types>

 <xsd:schema elementFormDefault="qualified" attributeFormDefault="unqualified"
 targetNamespace="urn:crmondemand/ws/odctibs/ctiactivity/"

 xmlns:xsd="http://www.w3.org/2001/XMLSchema">

 <xsd:import namespace="urn:/crmondemand/xml/ctiactivity/data" />

 <xsd:element name="CTIActivityInsert_Input">

 <xsd:complexType>

 <xsd:sequence>

 <xsd:element ref="apData:ListOfInteraction" />

 </xsd:sequence>

 </xsd:complexType>

 </xsd:element>

 <xsd:element name="CTIActivityInsert_Output">

 <xsd:complexType>

 <xsd:sequence>

 <xsd:element ref="apData:ListOfActivity" />

 </xsd:sequence>

 </xsd:complexType>
```

```
</xsd:element>

<xsd:element name="CTIActivityWrapUp_Input">

<xsd:complexType>

<xsd:sequence>

<xsd:element ref="apData:ListOfInteraction" />

</xsd:sequence>

</xsd:complexType>

</xsd:element>

<xsd:element name="CTIActivityWrapUp_Output">

<xsd:complexType>

<xsd:sequence>

<xsd:element ref="apData:ListOfActivity" />

</xsd:sequence>

</xsd:complexType>

</xsd:element>

</xsd:schema>

<xsd:schema elementFormDefault="qualified" attributeFormDefault="unqualified"

targetNamespace="urn:/crmondemand/xml/ctiactivity/data"

xmlns:apData="urn:/crmondemand/xml/ctiactivity/data"

xmlns:xsd="http://www.w3.org/2001/XMLSchema">

<xsd:element name="ListOfInteraction" type="apData:ListOfInteractionData" />

<xsd:complexType name="ListOfInteractionData">

<xsd:sequence>

<xsd:element ref="apData:Interaction" maxOccurs="unbounded" minOccurs="1" />

</xsd:sequence>

</xsd:complexType>

<xsd:element name="Interaction" type="apData:InteractionData" />

<xsd:complexType name="InteractionData">

<xsd:all>

<xsd:element name="InteractionId" type="apData:string100" maxOccurs="1" minOccurs="1"/>

<xsd:element name="AgentOfferTime" type="apData:string100" maxOccurs="1" minOccurs="1"/>

<xsd:element name="ChannelType" type="apData:string100" maxOccurs="1" minOccurs="1"/>

<xsd:element name="Origin" type="apData:string100" maxOccurs="1" minOccurs="0"/>
```

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```xml
<xsd:element name="Destination" type="apData:string100" maxOccurs="1" minOccurs="0"/>

<xsd:element name="Priority" type="apData:string100" maxOccurs="1" minOccurs="0"/>

<xsd:element name="IVRBeginTime" type="apData:string100" maxOccurs="1" minOccurs="0"/>

<xsd:element name="QueueBeginTime" type="apData:string100" maxOccurs="1" minOccurs="0"/>

<xsd:element name="Queue" type="apData:string250" maxOccurs="1" minOccurs="0"/>

<xsd:element name="CampaignSourceCode" type="apData:string100" maxOccurs="1" minOccurs="0"/>

<xsd:element name="ContactPhoneNumber" type="apData:string100" maxOccurs="1" minOccurs="0"/

<xsd:element name="ServiceRequestNumber" type="apData:string100" maxOccurs="1" minOccurs="0"/>

<xsd:element name="AssociatedRecordType" type="apData:string100" maxOccurs="1" minOccurs="0"/>

<xsd:element name="AssociatedRecordId" type="apData:string100" maxOccurs="1" minOccurs="0"/>

<xsd:element name="CreateServiceRequest" type="xsd:boolean" maxOccurs="1" minOccurs="0"/>

</xsd:all>

</xsd:complexType>

<xsd:element name="ListOfActivity" type="apData:ListOfActivityData" />

<xsd:complexType name="ListOfActivityData">

<xsd:sequence>

<xsd:element ref="apData:Activity" maxOccurs="unbounded" minOccurs="1" />

</xsd:sequence>

</xsd:complexType>

<xsd:element name="Activity" type="apData:ActivityData" />

<xsd:complexType name="ActivityData">

<xsd:all>

<xsd:element name="Status" type="xsd:string" maxOccurs="1" minOccurs="1"/>

<xsd:element name="InteractionId" type="xsd:string" maxOccurs="1" minOccurs="1" />

<xsd:element name="AgentOfferTime" type="xsd:string" maxOccurs="1" minOccurs="1" />

<xsd:element name="AccountId" type="xsd:string" maxOccurs="1" minOccurs="0" />

<xsd:element name="ActivityId" type="xsd:string" maxOccurs="1" minOccurs="0" />

<xsd:element name="CampaignId" type="xsd:string" maxOccurs="1" minOccurs="0" />

<xsd:element name="ContactId" type="xsd:string" maxOccurs="1" minOccurs="0" />

<xsd:element name="LeadId" type="xsd:string" maxOccurs="1" minOccurs="0"/>

<xsd:element name="ServiceRequestId" type="xsd:string" maxOccurs="1" minOccurs="0" />

<xsd:element name="OpportunityId" type="xsd:string" maxOccurs="1" minOccurs="0" />

<xsd:element name="AccountName" type="xsd:string" maxOccurs="1" minOccurs="0" />
```

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```
<xsd:element name="CampaignName" type="xsd:string" maxOccurs="1" minOccurs="0" />

<xsd:element name="ContactFullName" type="xsd:string" maxOccurs="1" minOccurs="0" />

<xsd:element name="LeadFullName" type="xsd:string" maxOccurs="1" minOccurs="0" />

<xsd:element name="ServiceRequestNumber" type="xsd:string" maxOccurs="1" minOccurs="0" />

<xsd:element name="OpportunityName" type="xsd:string" maxOccurs="1" minOccurs="0" />

<xsd:element name="ScreenPopRecordId" type="xsd:string" maxOccurs="1" minOccurs="0" />

<xsd:element name="ScreenPopRecordType" type="xsd:string" maxOccurs="1" minOccurs="0" />

</xsd:all>

</xsd:complexType>

<xsd:simpleType name="string250">

<xsd:restriction base="xsd:string">

<xsd:maxLength value="250"/>

</xsd:restriction>

</xsd:simpleType>

<xsd:simpleType name="string100">

<xsd:restriction base="xsd:string">

<xsd:maxLength value="100"/>

</xsd:restriction>

</xsd:simpleType>

</xsd:schema>

</types>

<message name="CTIActivityInsert_Input">

 <part name="CTIActivityInsert_Input" element="tns:CTIActivityInsert_Input" />

</message>

<message name="CTIActivityInsert_Output">

 <part name="CTIActivityInsert_Output" element="tns:CTIActivityInsert_Output" />

</message>

<message name="CTIActivityWrapUp_Input">

 <part name="CTIActivityWrapUp_Input" element="tns:CTIActivityWrapUp_Input" />

</message>

<message name="CTIActivityWrapUp_Output">

 <part name="CTIActivityWrapUp_Output" element="tns:CTIActivityWrapUp_Output" />

</message>
```

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```
<portType name="CTIActivityService">

<operation name="CTIActivityInsert">

 <input message="tns:CTIActivityInsert_Input" />

 <output message="tns:CTIActivityInsert_Output" />

</operation>

<operation name="CTIActivityWrapUp">

 <input message="tns:CTIActivityWrapUp_Input" />

 <output message="tns:CTIActivityWrapUp_Output" />

</operation>

</portType>

<binding name="CTIActivityService" type="tns:CTIActivityService">

 <soap:binding style="document" transport="http://schemas.xmlsoap.org/soap/http" />

 <operation name="CTIActivityInsert">

 <soap:operation soapAction="document/urn:crmondemand/ws/odctibs/ctiactivity/:CTIActivityInsert"/>

 <input>

 <soap:body use="literal" />

 </input>

 <output>

 <soap:body use="literal" />

 </output>

 </operation>

 <operation name="CTIActivityWrapUp">

 <soap:operation soapAction="document/urn:crmondemand/ws/odctibs/ctiactivity/:CTIActivityWrapUp"/>

 <input>

 <soap:body use="literal" />

 </input>

 <output>

 <soap:body use="literal" />

 </output>

 </operation>

</binding>

 <service name="CTIActivityService">

 <port name="CTIActivityService" binding="tns:CTIActivityService">
```

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```
      <soap:address location="/Services/cte/CTIActivityService" />

   </port>

   </service>

</definitions>
```