



Installation and Configuration Guide Cisco Unified CRM Connector for SAP

Release 1.0(1)

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Corporate Headquarters

Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
<http://www.cisco.com>
Tel: 408 526-4000
800 553-NETS (6387)
Fax: 408 526-4100



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Preface

Purpose

This guide provides all of the information necessary to install and configure Cisco Unified CRM Connector for SAP.

Audience

This document is intended for system administrators and engineers responsible for installing and configuring Cisco Unified CRM Connector for SAP.

Organization

Chapter 1, "Introduction"

Overview of integration and description of supported deployment models for *Cisco Unified CRM Connector for SAP*.

Chapter 2, "Installation"

This chapter provides information and the procedures for installing *Cisco Unified CRM Connector for SAP*.

Chapter 3, "Configuration"

Overview of configuration settings of the *Cisco Unified CRM Connector for SAP*.

Obtaining Documentation, Obtaining Support, and Security Guidelines

For information on obtaining documentation, obtaining support, providing documentation feedback, security guidelines, and also recommended aliases and general Cisco documents, see the monthly What's New in Cisco Product Documentation, which also lists all new and revised Cisco technical documentation, at:

<http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html>

1. INTRODUCTION

Overview

The *Cisco Unified CRM Connector for SAP* integrates the SAP CRM application with Cisco Unified Contact Center Enterprise/Hosted.

Architecture

The following diagram depicts how SAP CRM is connected to the Unified CCE platform.

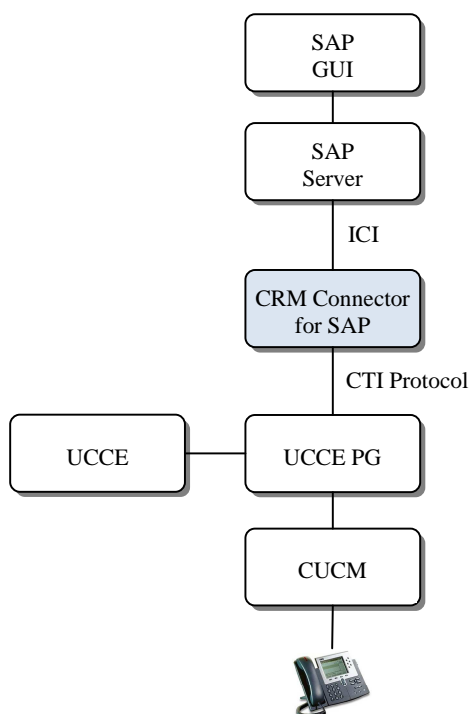


Figure 1: SAP Integration Architecture

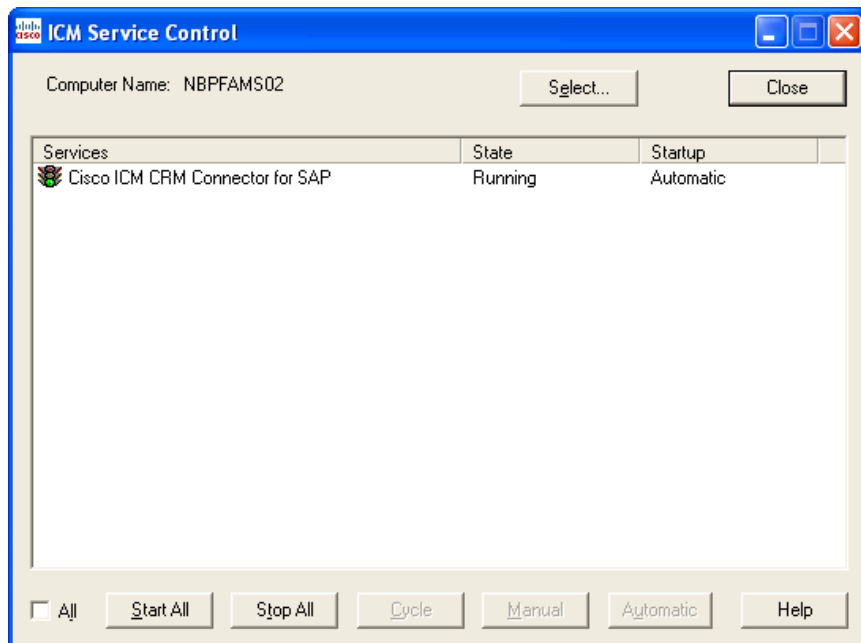
The *Cisco Unified CRM Connector for SAP* connects to the ctisvr process on the Unified CCE PG using the CTI Protocol interface and to the SAP server using the ICI interface.

The “Integrated Communication Interface” (ICI) is based on SOAP and XML as modern, web service oriented interface technology and it is designed to support the integration of SAP components with non-SAP single communication type products (e.g. CTI products) as well as multiple communication types products (e.g. CTI, messaging and chat).

In particular, the Integrated Communication Interface is designed to support the integration of multichannel management systems (“Contact Centers”) with the SAP CRM Interaction Center WebClient (“ICWC”).

Starting Cisco Unified CRM Connector for SAP

Cisco Unified CRM Connector for SAP is installed as Windows Service and should be started and stopped using Cisco ICM Service Control. Another option is to use the Windows services application to control the *Cisco Unified CRM Connector for SAP*.



Supported Features

The *Cisco Unified CRM Connector for SAP* supports the following features:

- Unified Contact Center Enterprise (UCCE)
- Unified Contact Center Hosted (UCCH)
- Agent login via the SAP IC Web Client
- Agent Not Ready reason codes
- All call information from ICM (CTI Server) is available to the SAP ICI. SAP applications can use any data parameter for screen pop, including but not limited to ANI, DNIS and ICM Peripheral Variables.
- Inbound Calls
- Outgoing Calls (manual outbound dialing)
- Silent Call Transfers
- Consult Call Transfer
- Consult Conference Calls
- Unified Communications Manager -based Silent Monitoring (restrictions apply)
- DTMF

Unsupported Features

The *Cisco Unified CRM Connector for SAP* does not support the following features:

- Unified System Contact Center Enterprise (USCCE)
- Unified Intelligent Contact Management (UICM)
- Unified Contact Center Express (UCCX)
- Cisco Mobile Agent
- Cisco Outbound Option (automated outbound dialing)
- Agent Logout Reason Codes
- Desktop or SPAN-based Silent Monitoring
- Non-voice channels
- SAPphone interface (RFC)
- Button enablement on the SAP GUI is not controlled by *Cisco Unified CRM Connector for SAP*
- Configuration synchronization between ICM and SAP
- Multiple calls for the same agent (call waiting feature on Cisco Unified Communications Manager must be disabled for the SAP agent phones)

- SAP ICI does not support automated failover between two *Cisco Unified CRM Connectors for SAP*.
- Supervisor features on SAP frontend. CTI OS supervisor desktop can be used to supervise.
- SAP Single Sign On
- ECC Arrays
- Encryption and security of ICI via HTTPS/SSL
- SAP call attached data cannot be transferred for call transfers and conferences across multiple UCCE/UCCH peripherals
- UCCE enforcement of Not Ready reason codes (“Idle reason required” setting in ICM)
- Statistical data upload from UCCE to SAP
- SAP IC Manager Dashboard
- Queue and Agent Presence Information
- Chat, E-Mail and Action Item Routing

Minimum Software Requirements

SAP Interface and Release Level Requirements:

- CA-ICI-CTI 6.2 - Integrated Communications Interface – CTI 6.20
- SAP NetWeaver Application Server 6.10, 6.20, 6.30, 2004, 7.0
- SAP ICI Free Seating feature is required

The *Cisco Unified CRM Connector for SAP* requires Microsoft Windows 2003 operating system. Only the English version of the operating system is supported. It is supported for following Cisco platforms:

Unified Contact Center Enterprise (UCCE) versions 7.0, 7.1, 7.2 and 7.5 as well as Unified Contact Center Hosted (UCCH) version 7.0, 7.1, 7.2 and 7.5. Cisco’s Unified System Contact Center Enterprise (USCCE), Unified Intelligent Contact Management (UICM) and Unified Contact Center Express (UCCX) are not supported.

For hardware and third-party software specifications for all involved Cisco components as well as information regarding hard- and software requirements of UCCE/UCCH, refer to the *Hardware and System Software Specification (Bill of materials): Cisco ICM/IPCC Enterprise & Hosted Edition*, which is accessible from

http://www.cisco.com/en/US/products/sw/custcosw/ps1001/products_user_guide_list.html

In addition to above specification, the SAP Registration Tool requires the Microsoft .NET Framework Version 2.0 or later. The latest version can be downloaded from

<http://msdn.microsoft.com/en-us/netframework>

Deployment models

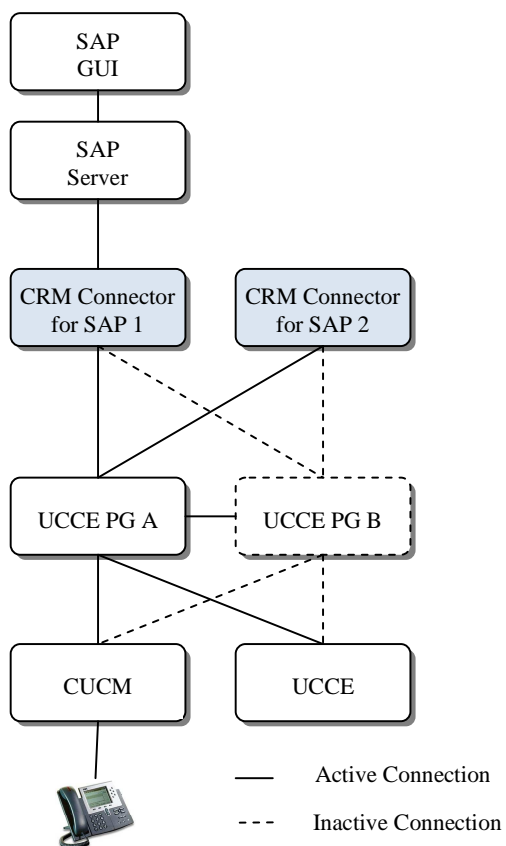
In this chapter the possible deployment models for *Cisco Unified CRM Connector for SAP* are explained.

The current release of the *Cisco Unified CRM Connector for SAP* does not support multiple instances. Only one single instance of the *Cisco Unified CRM Connector for SAP* can be installed per server.

The *Cisco Unified CRM Connector for SAP* is installed co-located on the UCCE PG or standalone on a dedicated server.

Single Peripheral deployment

In a single peripheral deployment all SAP agents are configured on the same ICM peripheral. One *Cisco Unified CRM Connector for SAP* is installed and connects PG A/B. An option is to install a second *Cisco Unified CRM Connector for SAP* on a different server for better redundancy between the *Cisco Unified CRM Connector for SAP* and the UCCE PG, but note that SAP does not support automated failover to a second *Cisco Unified CRM Connector for SAP*. This means, that if the connection between SAP and the active *Cisco Unified CRM Connector for SAP* fails, the switch over to the idle *Cisco Unified CRM Connector for SAP* has to be executed manually on the SAP system.



Multiple Peripheral deployment

In larger deployments the SAP agents may be configured on several ICM peripherals. You need one *Cisco Unified CRM Connector for SAP* (or two for better redundancy as explained above) per ICM peripheral.

Please note that in a multiple peripheral deployment SAP call attached data cannot be transferred for call transfers and conferences. SAP call attached data will only be transferred if the agents are located on the same peripheral. However, the call itself will still be transferred including call variables and ECC variables.

2. INSTALLATION

To install the *Cisco Unified CRM Connector for SAP*, start the installation procedure by executing the *Cisco Unified CRM Connector for SAP Installer (ConnectorSAP-V1.0(1)-Installer.exe)* and follow the installation instructions.

During the installation procedure configuration dialogs are shown which allow the configuration of *Cisco Unified CRM Connector for SAP* and are explained in the following sections.

SAP Settings

This installation dialog is used to configure the basic SAP settings.

Please note that the use of SSL encrypted communication is not supported in the current release of the *Cisco Unified CRM Connector for SAP*. Therefore, the setting “Enable SSL” must not be activated.

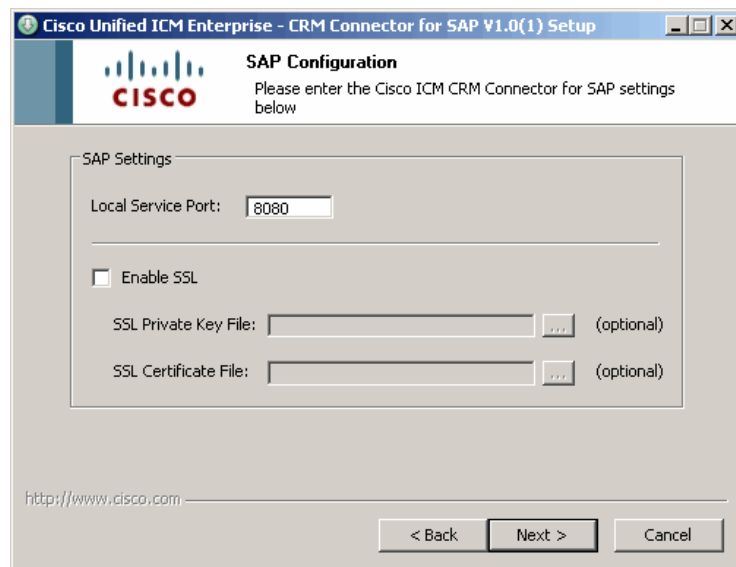


Figure 2: SAP Settings Dialog

SAP Configuration	
Setting	Description
Local Service Port	Port which will be used by the local SAP ICI web service. Make sure this port is not used by another application!

Table 1: SAP Settings

Dialing Scheme Settings

This dialog is used to define the dialing scheme used in the target environment.

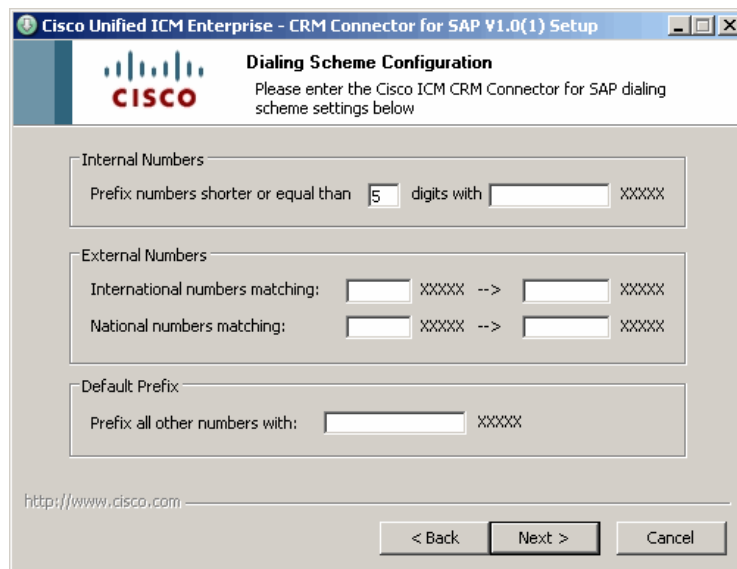
These settings are used by *Cisco Unified CRM Connector for SAP* to create a canonical telephone number from the number signaled by the telephone system. The SAP interface expects fully qualified numbers.

The SAP Integrated Communications Interface (ICI), which is the interface that the *Cisco Unified CRM Connector for SAP* is using to communicate with SAP, stipulates the format for a telephone as follows:

+CountryCode AreaCode SubscriberNumber (without any delimiter characters).

An example of a valid number would be the following: +496227747474.

It is a requirement of the SAP ICI interface that all telephone numbers begin with the “+” symbol. Therefore, it is not possible to change the format of the telephone numbers within the *Cisco Unified CRM Connector for SAP*. It is recommended to adjust the search routine within SAP to search for the telephone number beginning with the “+” symbol. However, regardless of how the dialing scheme is configured, the “+” symbol will always be the first character being sent from the *Cisco Unified CRM Connector for SAP*.



The screenshot shows a Windows-style dialog box titled "Cisco Unified ICM Enterprise - CRM Connector for SAP V1.0(1) Setup". The main content area is titled "Dialing Scheme Configuration" and includes the instruction: "Please enter the Cisco ICM CRM Connector for SAP dialing scheme settings below".

The configuration is organized into three sections:

- Internal Numbers:** A field for "Prefix numbers shorter or equal than" is set to "5", followed by "digits with" and a text box containing "XXXXX".
- External Numbers:** Two rows of matching rules. The first row is "International numbers matching:" with two text boxes, each containing "XXXXX", separated by "-->". The second row is "National numbers matching:" with two text boxes, each containing "XXXXX", separated by "-->".
- Default Prefix:** A field for "Prefix all other numbers with:" followed by a text box containing "XXXXX".

At the bottom left, there is a URL "http://www.cisco.com". At the bottom right, there are three buttons: "< Back", "Next >", and "Cancel".

Figure 3: Dialing Scheme Settings Dialog

Dialing Scheme Configuration	
Setting	Description
Prefix numbers shorter than or equal to X with Y .	<p>Numbers shorter than or equal to X digits will be prefixed with Y (Access code + Country code + Area code + Prefix) to translate internal to external phone numbers.</p> <p>Example:</p> <ul style="list-style-type: none"> ▪ Internal number length: 4 ▪ Prefix: 4131444 ▪ Signaled number: 5001 ▪ Translated number: 41314445001
International numbers matching $X \rightarrow Y$	<p>If a signaled number matches the given prefix X, the prefix is replaced by Y. This setting may be used to remove the leading zero from signaled numbers.</p> <p>Example:</p> <ul style="list-style-type: none"> ▪ Match: 000 ▪ Replace: ▪ Signaled number: 00041314445001 ▪ Translated number: 41314445001
National numbers matching $X \rightarrow Y$	<p>If a signaled number matches the given prefix X, the prefix is replaced by Y. This setting may be used to remove the leading zero from signaled national numbers and prefix numbers with a country code.</p> <p>Example:</p> <ul style="list-style-type: none"> ▪ Match: 00 ▪ Replace: 41 ▪ Signaled number: 00314445001 ▪ Translated number: 41314445001
Prefix all other numbers with X	<p>Numbers not matching any other rule may be prefixed with a default prefix X.</p>

Table 2: Dialing Scheme Settings

CTI Settings

This dialog is used to configure the CTI settings used by the *Cisco Unified CRM Connector for SAP*.

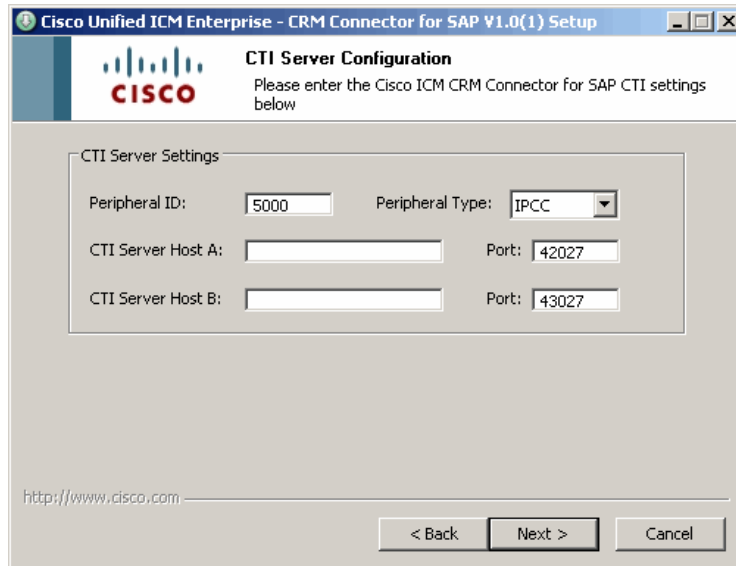


Figure 4: CTI Settings Dialog

CTI Configuration	
Setting	Description
Peripheral ID	Peripheral ID of PG
Peripheral Type	Type of peripheral: <ul style="list-style-type: none"> ▪ IPCC Note: IPCC Enterprise is the only supported peripheral type in this release of the Cisco Unified CRM Connector for SAP.
CTI Server A host and port	Host and port number of PG side A
CTI Server B host and port	Host and port number of PG side B

Table 3: CTI Settings

Attached Data Transfer Settings

This configuration dialog is used to configure the attached data transfer settings used by the *Cisco Unified CRM Connector for SAP*.

If attached data transfer is enabled, a call variable or ECC variable name has to be provided which will be used by the *Cisco Unified CRM Connector for SAP* to transfer call data from one agent to another.

Please note that the use of the external *Cisco CRM Connector DataStore* is not supported in the current release of the *Cisco Unified CRM Connector for SAP*. Therefore, the setting “Use external CRM Connector DataStore” must not be activated.

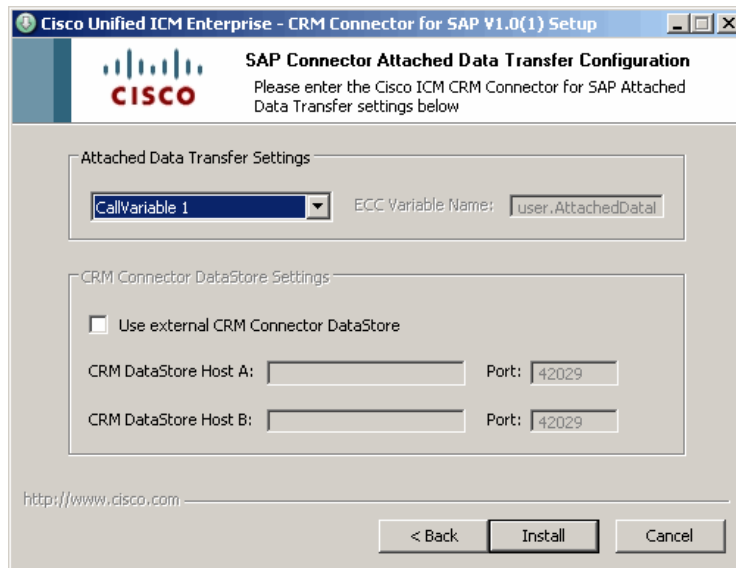


Figure 5: Attached Data Transfer Settings Dialog

Attached Data Transfer Configuration	
Setting	Description
Attached Data Transfer Type	Use the drop-down list to select if Attached Data Transfer should be enabled and if a call variable or ECC variable should be used. If a call variable is selected, ensure that the variable is not used by other applications.
ECC Variable Name	If an ECC variable is used for Attached Data Transfer, the name of the ECC variable must be provided. Ensure that the ECC variable exists and is not used by another application. The ECC variable size setting must be set to 25. Default name is 'user.AttachedDataKey'

Table 4: Attached Data Transfer Settings

3. CONFIGURATION

ICM Agent Desk Settings

ICM Agent Desk Settings configured for SAP agents must contain the following settings:

- Work mode on incoming = Required
- Work mode on outgoing = Required
- Wrapup Time = 7200 seconds

These work mode settings assure that the agent states are in sync between ICM and the SAP Interaction Center Web Client (ICWC).

The customer data remains on the ICWC until the End button is selected or the data is replaced with the data of a new call. An inadvertent overwriting of the data can only be guaranteed if the wrapup timer is set to the maximum (7200 seconds), the two work mode settings are set to "required" and no direct calls are sent to the agent phone. The wrapup timer must be set to the maximum to prevent the agent from going into a ready state and hence possibly receive a routed call before he has finished his after call work. If a direct call is sent, the wrapup call will be terminated on the ICM side with this new call and thereby the customer data of the wrapup call will be overwritten on the ICWC. After the direct call is ended, the overwritten customer data that has not been saved is no longer available on the SAP or on the ICM side.

If an agent, registered on the ICM, places a direct call to another agent registered on the ICM and this call is ended, the first agent will not enter wrapup status, because the wrapup can only be related to one end of the call. The same applies for a consult call from one agent to another.

If a consult call from an agent registered on the ICM is placed to a phone not registered on the ICM, the call will enter wrapup status on the agent. However, SAP cannot be notified of this wrapup status, because the termination of this wrapup call on the ICWC would also delete the original call.

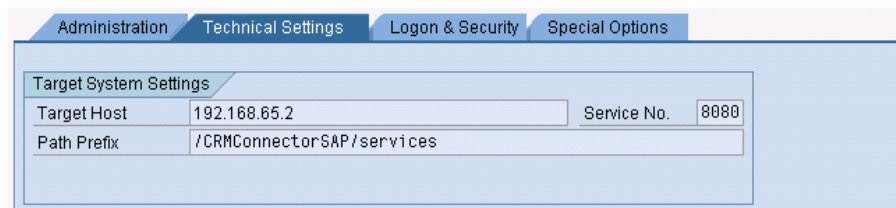
An SAP agent can leave wrapup status only by selecting the End button on the ICWC because only the End button actually ends the call. Thereby the customer data on the ICWC will disappear. Selecting Ready or NotReady allows the agent to enter the desired state.

The call waiting feature on Cisco Unified Communications Manager must be disabled for the SAP agent phones.

SAP Target System Settings

On the SAP system the connection settings for the *Cisco Unified CRM Connector for SAP* must be configured in the RFC Destination page on the *Technical Settings* tab. In the *Target System Settings* field *Target Host* enter the IP Address and Service No. of the *Cisco Unified CRM Connector for SAP*. The Service No. must match the *Local Service Port* configured in the *Cisco Unified CRM Connector for SAP*.

Default value for *Path Prefix* is “/CRMConnectorSAP/services”.



The screenshot shows the SAP configuration interface for Target System Settings. It features a navigation bar with tabs for Administration, Technical Settings, Logon & Security, and Special Options. The 'Technical Settings' tab is active. Below the navigation bar, there is a 'Target System Settings' section with a table containing the following fields:

Target System Settings			
Target Host	192.168.65.2	Service No.	8080
Path Prefix	/CRMConnectorSAP/services		

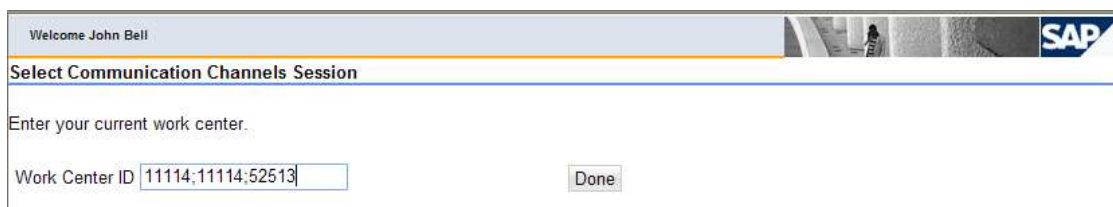
Figure 6: SAP Target System Settings

SAP Agent Login using Free Seating

Up to version 3.01 of ICI, a static association was presumed between the SAP system user and a given workplace. In other words, the agent always worked at the same workplace, i.e. the agent always used the same telephone extension and the same computer.

The new Free Seating functions allow an SAP system to exchange data about contact center workplaces with a contact center system and to report assignment of agents to workplaces. These functions allow SAP applications to query what workplace assignment mode the contact center supports, to report to the contact center system a location of the agent, and to query the contact center for the list of workplaces available for the agent.

As Cisco Unified CCE does not support such a list of workplaces (i.e. Device Targets), the login dialog needs to be modified by a SAP consultant so that the agent can specify his Agent ID, password and the extension of the phone he wants to use upon login.



The screenshot shows the SAP Agent login dialog. At the top, it says 'Welcome John Bell' and has the SAP logo. Below that, it says 'Select Communication Channels Session'. The main area contains the text 'Enter your current work center.' followed by a text input field containing 'Work Center ID 11114;11114;52513' and a 'Done' button.

Figure 7: SAP Agent login

Note: Currently Free Seating is only available in SAP CRM as of release 4.1. In other SAP modules Free Seating can be made available upon request. It can be added by your SAP consultant.

Configure SAP Workmodes Settings

SAP work modes

Customer defined workmodes for Not Ready state can be configured in the *Cisco Unified CRM Connector for SAP* registry. These customer defined workmodes are displayed in a workmode drop-down list on the SAP GUI.

In this version of the *Cisco Unified CRM Connector for SAP* the Workmode list is language independent. All SAP GUI languages display the same workmodes.

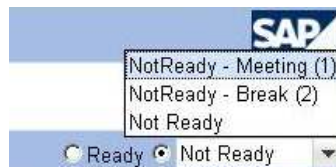


Figure 8: SAP Agent workmodes

The above List is displayed with a *TpiWorkmodeListEn* setting of 1001=NotReady - Meeting (1); 1002=NotReady - Break (2)

Customer defined workmode numbers should be higher than 999.

Idle Reason Required

The setting “**Idle reason required**”, within the ICM Agent Desk Settings, **has to be deactivated.**

If the setting "Idle reason required" within the ICM Agent Desk Settings is activated, an agent can only set himself to Not-Ready when he uses a defined Not-Ready reason code other than "0". The default Not-Ready button does not work anymore since in that case the reason code "0" is sent to ICM which rejects the procedure.

Furthermore, the agent can only log himself out if he enters the Not-Ready state before (by using a Not-Ready reason). If the agent logs himself out directly by closing the browser window, he will remain logged in to ICM. This happens because the CRM Connector sends a Not-Ready request with reason code "0" to ICM immediately before the logout request.

Mapping SAP work modes to ICM Not Ready reason codes

To map SAP work mode number to ICM Not Ready reason codes there is a *TpiNotReadyReasonCodeOffset* registry setting. For the above example

the offset should be set to 1000 to match ICM Not Ready reason code 1 and 2.

SAP Workmodes Settings	
Key	
HKEY_LOCAL_MACHINE\SOFTWARE\Cisco Systems, Inc.\CRMConnectorSAP\SAP1\CTIData\CTIgw1\Config	
Name	Value
TpiWorkmodeListEn	Workmode list in English Language. String in format “nnn=Reason Code Description”. nnn is the Not Ready reason code. Multiple entries are delimited by a semicolon. These items will be listed on the ICWC as additional workmodes. Default is no additional workmodes. Example: 1001=Not Ready - Meeting (1);1002= Not Ready - Break (2)
TpiNotReadyReasonCodeOffset	Not Ready reason code offset between SAP and ICM. Default is 0. Example: SAP: 1001=Not Ready - Meeting (1) Offset = 1000 This results in ICM Not Ready reason code 1 sent to CTI Server.

Table 5: SAP Workmodes Settings

SAP call attached data on incoming call

On an incoming call ICM Peripheral Variables can be transferred to SAP as item attached data. In order to present this data in the SAP GUI, a SAP consultant needs to modify the SAP GUI as requested by the customer. ECC variables can only be used to send data from *Cisco Unified CRM Connector for SAP* to ICM. Therefore they cannot be used with an incoming call to transfer call attached data. Only ICM call variables can be used in this case.

ICM to SAP Call Variable Mask
Key
HKEY_LOCAL_MACHINE\SOFTWARE\Cisco Systems, Inc.\CRMConnectorSAP\SAP1\CTIData\CTIgw1\Config

Name	Value
CtiCallVariableMask	<p>This is a bitmask that allows enabling of Call Variables copied to SAP Call attached data:</p> <p>0x001 = ICM PeripheralVariable 1 0x002 = ICM PeripheralVariable 2 0x004 = ICM PeripheralVariable 3 0x008 = ICM PeripheralVariable 4 0x010 = ICM PeripheralVariable 5 0x020 = ICM PeripheralVariable 6 0x040 = ICM PeripheralVariable 7 0x080 = ICM PeripheralVariable 8 0x100 = ICM PeripheralVariable 9 0x200 = ICM PeripheralVariable 10</p> <p>Default is 0x3ff (all PeripheralVariables)</p>

Table 6: ICM to SAP Call Variable Mask Settings

SAP Call Attached Data on call transfer

In order to transfer call attached data populated by SAP an ICM call variable and the built-in data storage of the *Cisco Unified CRM Connector for SAP* is used. The call attached data is temporarily stored within the internal data storage of the *Cisco Unified CRM Connector for SAP* service for agent to agent call transfer or call conference. Only a reference to the data storage entry needs to be transferred among the agents using ICM call variables.

Please note that in a multiple peripheral deployment SAP call attached data cannot be transferred for call transfers and conferences. SAP call attached data will only be transferred if the agents are located on the same peripheral. However, the call itself will still be transferred including call variables and ECC variables.

Call Attached Data Settings

If attached data transfer is enabled, a call variable or ECC variable name has to be provided that will be used by the *Cisco Unified CRM Connector for SAP* to transfer call data from one agent to another.

Call Attached Data Settings	
Key	
HKEY_LOCAL_MACHINE\SOFTWARE\Cisco Systems, Inc.\CRMConnectorSAP\SAP1\CTIData\CTIgw1\Config	
Name	Value
CtiAttachedDataWorkType	0 = No attached data transfer (default) 1 = ICM PeripheralVariable 1 2 = ICM PeripheralVariable 2 3 = ICM PeripheralVariable 3 4 = ICM PeripheralVariable 4 5 = ICM PeripheralVariable 5 6 = ICM PeripheralVariable 6 7 = ICM PeripheralVariable 7 8 = ICM PeripheralVariable 8 9 = ICM PeripheralVariable 9 10 = ICM PeripheralVariable 10 11 = ECC variable
CtiAttachedDataEccVariableName	name of ECC variable the unique reference id is stored in. This key is only used for CtiAttachedDataWorkType = 11.

Table 7: Call Attached Data Settings

Store ICI Call Reference in ICM Peripheral Variable

On the SAP ICI interface calls are identified by a GUID. This GUID created by the *Cisco Unified CRM Connector for SAP* can optionally be stored in an ICM call variable. To enable GUID storage change the following registry keys in *Cisco Unified CRM Connector for SAP* Configuration.

The GUID can be stored in a Cisco ICM call variable of your choice via the registry key CtiTpiCallReferenceType. If this registry entry contains the name of an existing ICM call variable, the GUID will be stored in this call variable. For outgoing calls, the GUID of the calling agent is stored. For incoming calls the GUID of the agent that will receive the call is stored. If an agent calls another agent directly, the GUID of the outgoing call will be overwritten by the GUID of the agent receiving the call.

ICI Call Reference Settings	
Key	
HKEY_LOCAL_MACHINE\SOFTWARE\Cisco Systems, Inc.\CRMConnectorSAP\SAP1\CTIData\CTIgw1\Config	
Name	Value
CtiTpiCallReferenceType	0 = ICI call id not stored in ICM call data (default) 1 = ICM PeripheralVariable 1 2 = ICM PeripheralVariable 2 3 = ICM PeripheralVariable 3 4 = ICM PeripheralVariable 4 5 = ICM PeripheralVariable 5 6 = ICM PeripheralVariable 6 7 = ICM PeripheralVariable 7 8 = ICM PeripheralVariable 8 9 = ICM PeripheralVariable 9 10 = ICM PeripheralVariable 10 11 = ECC variable
CtiTpiCallReferenceEccVariableName	name of ECC variable the ICI call id is stored in. This key is only used for CtiTpiCallReferenceType = 11.

Table 8: ICI Call Reference Settings

Unified CM Silent Monitor Support

In 7.2(1), CTI OS supports Cisco Unified Communications Manager 6.0 silent monitor implementation, called Unified CM Silent Monitor. With this type of Silent Monitor configured in CTI OS Server, SAP agents can be silent monitored by the supervisor that uses a standard CTI OS Supervisor Desktop.

Cisco Unified CRM Connector for SAP supports Unified CM Silent Monitoring. Please note the following requirements, versions and limitations for this functionality:

- SAP agent desktop will not receive any notification that call is being monitored.
- Agent desktop does not see call events related to the silent monitor call.
- SAP agent should use a hard phone. Types are listed below.
- For supervisor desktops CTI OS Server has to be configured for Unified CM Silent Monitor type. It can be done by running CTI OS Server setup. The following registry key indicates that Unified CM Silent Monitor type is configured and must be set to “1”:

```

- HKKLM\SOFTWARE\Cisco Systems, Inc.\Ctios_<Instance>\
CTIOS1\EnterpriseDesktopSettings\All Desktops\
IPCCSilentMonitor\Name\Settings\CCMBasedSilentMonitor

```

- Unified CM Silent Monitor is supported for the following versions
 - Cisco Unified Communications Manager: Version 6.0 or higher
 - Cisco UCCE: Version 7.2(1) or higher
 - Supervisor Desktop: CTI OS Supervisor Desktop Application Version 7.2 (1)
 - Agent Phone Device: Type 79x1 or later Cisco IP Phone (7941, 7961, or 7971 or later)
 - Cisco IP Communicator: 7.0 or higher (requires Cisco Unified Communications Manager 6.1.3 or later).
- Because silent monitor calls are estimated to be twice as expensive as a standard call, using Unified CM silent monitor reduces the total BHCA that can be supported by Cisco UCCE. The impact to performance is listed in the Hardware & System Software Spec. (Bill of Materials) for Cisco ICM/IPCC Enterprise & Hosted Editions located at:
http://www.cisco.com/en/US/products/sw/custcosw/ps1001/products_user_guide_list.html.
- Refer to the following guides to get more detail information on Unified CM Silent Monitor configuration and troubleshooting:
 - CTI OS System Manager's Guide
 - CTI OS Supervisor Desktop Guide
 - CTI OS Developer's Guide
 - CTI OS Troubleshooting Guide