

Intel® NetMerge™ Call Processing Software

Introduction

Order Number: 05-0414-007

Software/Version: Intel NetMerge Call Processing Software Version 6.0

INFORMATION IN THIS DOCUMENT IS PROVIDED IN CONNECTION WITH INTEL® PRODUCTS. NO LICENSE, EXPRESS OR IMPLIED, BY ESTOPPEL OR OTHERWISE, TO ANY INTELLECTUAL PROPERTY RIGHTS IS GRANTED BY THIS DOCUMENT. EXCEPT AS PROVIDED IN INTEL'S TERMS AND CONDITIONS OF SALE FOR SUCH PRODUCTS, INTEL ASSUMES NO LIABILITY WHATSOEVER, AND INTEL DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTY, RELATING TO SALE AND/OR USE OF INTEL PRODUCTS INCLUDING LIABILITY OR WARRANTIES RELATING TO FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY, OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT. Intel products are not intended for use in medical, life saving, or life sustaining applications.

Intel may make changes to specifications and product descriptions at any time, without notice.

This document as well as the software described in it is furnished under license and may only be used or copied in accordance with the terms of the license. The information in this manual is furnished for informational use only, is subject to change without notice, and should not be construed as a commitment by Intel Corporation. Intel Corporation assumes no responsibility or liability for any errors or inaccuracies that may appear in this document or any software that may be provided in association with this document.

Except as permitted by such license, no part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by any means without express written consent of Intel Corporation.

Copyright © 2002 Intel Corporation.

Intel and NetMerge are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries.

Java and all Java-based marks are trademarks or registered trademarks of Sun Microsystems, Inc. in the U.S. and other countries.

Acrobat and Adobe are trademarks of Adobe Systems, Incorporated.

†Other names and brands may be claimed as the property of others.

Publication date: September, 2002

For **Sales Offices** and other contact information, visit our web site at <http://www.intel.com>.

Contents

About This Manual	v
1 Overview	
1.1 What is the Call Processing Software?	1-1
1.1.1 Call Processing Software Network	1-1
1.2 Call Control on a Call Processing Network	1-2
1.3 Call Processing Applications	1-3
1.4 An Example Call Processing Application	1-4
2 Using the Call Processing Software	
2.1 Call Processing Application Programming Interface (API)	2-1
2.1.1 Including CTI Features in Your Application	2-1
2.1.2 Testing Your Application During Development	2-2
2.1.3 Management API	2-3
2.2 Call Processing Server	2-3
2.2.1 Configuring the Server Software	2-3
2.2.2 Managing the Server Software	2-4
2.3 Special Server Features and Functions	2-5
2.3.1 Server to Server Distributed Data	2-5
2.3.2 Security with Device Level Authorization	2-6
2.3.3 Client/Server Communication Through a Web Server	2-7
2.4 Call Processing Software Additional Interfaces	2-8
2.5 Using Call Processing Software with Network Call Control Software ..	2-8
3 Supported Environments	
3.1 Supported Platforms	3-1
3.2 Supported Switches	3-2
3.3 Supported Network Protocols	3-2

3.4	Additional Interface Software Required	3-3
3.5	Portability	3-4

Index

Figures

1-1	A Call Processing Network	1-2
1-2	Associating the Application with a Device and a Link.	1-3
2-1	Example Distributed Data Configuration	2-6
2-2	Using the Web for Client/Server Communication	2-8
2-3	Call Processing Software and the CSTA Gatekeeper	2-9

Tables

3-1	Call Processing Software Supported Platforms	3-1
3-2	Supported Network Protocols.	3-2
3-3	Additional DCE/RPC Software Required	3-3

About This Manual

This manual provides an overview of Intel NetMerge Call Processing Software, computer-telephony concepts, and telephony application functions.

Audience

This manual is for anyone interested in the Intel NetMerge Call Processing Software.

Associated Documentation

Intel NetMerge Call Processing Software Documentation

In addition to this manual, the following are included in the Intel NetMerge Call Processing Software documentation set:

- *Intel NetMerge Call Processing Software Installation and Configuration Guide*—This manual describes how to install and configure the call processing server and the call processing API software on supported platforms, how to start and stop the call processing server and how to start the Call Processing Software Control Program. This manual is provided in hard copy and as a Portable Document Format (PDF) file.
- *Intel NetMerge Call Processing Software C Programming Guide*—This manual provides detailed descriptions of the call processing API procedural routines and guidelines for using them. It also includes details of the operational differences for links to specific switches. This manual is provided in hard copy and as a PDF file.
- *Intel NetMerge Call Processing Software Management API C Programming Guide*—This manual describes all management API routines, and provides guidelines for creating a management application similar to the Control Program. This manual is provided only as a PDF file.
- *Intel NetMerge Call Processing API for the Java™ Platform*—This provides a detailed description of the call processing API for the Java™ platform. It

defines the call processing packages, interfaces, and classes, along with the fields and methods supported. It also includes details of the operational differences for links to specific switches. This information is provided as a series of HTML files.

- *Intel NetMerge Call Processing Management API for the Java™ Platform*—This information provides a detailed description of the call processing management API for the Java platform. This defines the call processing software packages, interfaces, and classes, along with the fields and methods supported. This information is provided as a series of HTML files.
- *Intel NetMerge Call Processing Software CTC Test User's Guide*—This manual describes how to use the Call Processing Software application, CTC Test. You can use this application to check the validity of function sequences you expect to make using your call processing software application. This manual is provided as a PDF file.
- *Intel NetMerge Call Processing Software Release Notes*—These online notes provide information about changes to the Call Processing Software and/or documentation at the time of release. This document is provided as a text file.

All online files, and the Adobe™ Acrobat™ Reader used to view PDF files, can be installed at the same time as the call processing server software. For details, refer to the *Intel NetMerge Call Processing Software Installation and Configuration Guide*.

Intel Web Site

For more information about Call Processing Software, and other Intel products, visit Intel's web site at **<http://www.intel.com>**.

Switch Documentation

Refer to the documentation supplied with the switch for details of its features and characteristics.

Terms and Definitions

The following terms are used throughout this manual:

Term	Definition
Call processing API for the Java platform	The Intel NetMerge Call Processing Software API for the Java platform.
Call processing API	The Intel NetMerge Call Processing Software API for all supported platforms.
Client or call processing client	A supported system that has the call processing API software installed, and is running a call processing application.
Server or call processing server	A supported system running the call processing server software.
Communications link	A logical link between the server and the switch.
Switch	The telephony switching device, for example, a Private Automated Branch Exchange (PABX), Private Branch Exchange (PBX), or a central office switch.
OpenVMS	Refers to the OpenVMS [†] Alpha operating system.
Tru64 UNIX	Refers to the Compaq [†] Tru64 [†] UNIX [†] operating system.
Windows 9x	Unless otherwise stated, refers to the Windows [†] 95, Windows 98 and Windows Me operating systems.

Overview

1.1 What is the Call Processing Software?

Intel NetMerge Call Processing Software is a client/server-based Computer Telephony Integration (CTI) package that enables you to:

- Develop and run CTI applications, using the call processing Application Programming Interface (API).
- Manage, monitor and control a CTI network, using the call processing server.

CTI is the interconnection of telephone and computer technology. A CTI application can not only perform basic call control functions, such as making, transferring and receiving calls, but as an integrated part of the computer network, can retrieve customer and other business information in computer databases and use it to provide better information for the business and better service for customers.

1.1.1 Call Processing Software Network

There are three main components in a Call Processing Software CTI network:

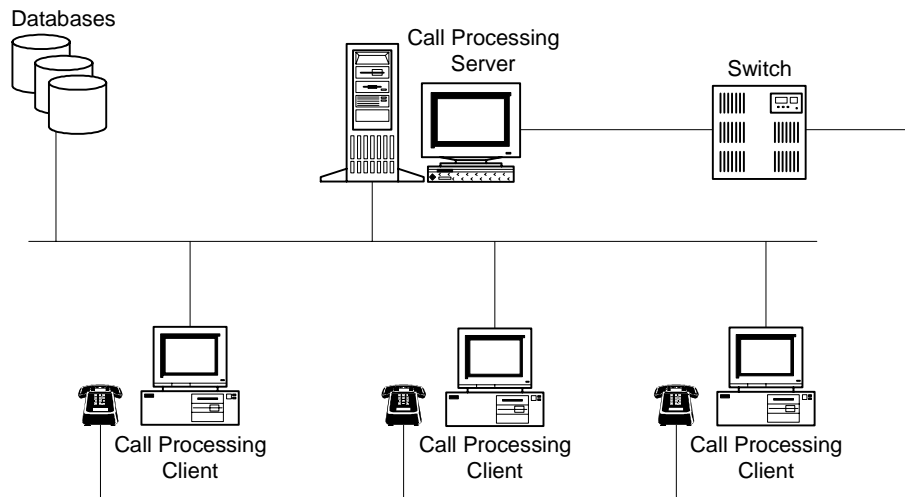
- **Call processing clients.** These are systems that have the call processing API installed, and are running a CTI application developed using the API.
- **Call processing server.** The server passes messages between the call processing applications on the clients and the switching environment.
- **Telephony switching environment.** The call processing server supports a wide range of popular switches, and can also be integrated into an H.323 (IP telephony) environment.

Figure 1-1 shows an example CTI network with a call processing server, and multiple call processing clients. In this figure:

- The call processing server provides the link between the telephone switch and the clients.
- Each client PC or workstation has the call processing API software installed.

- A call processing application is running on each client PC or workstation.

Figure 1-1 A Call Processing Network



1.2 Call Control on a Call Processing Network

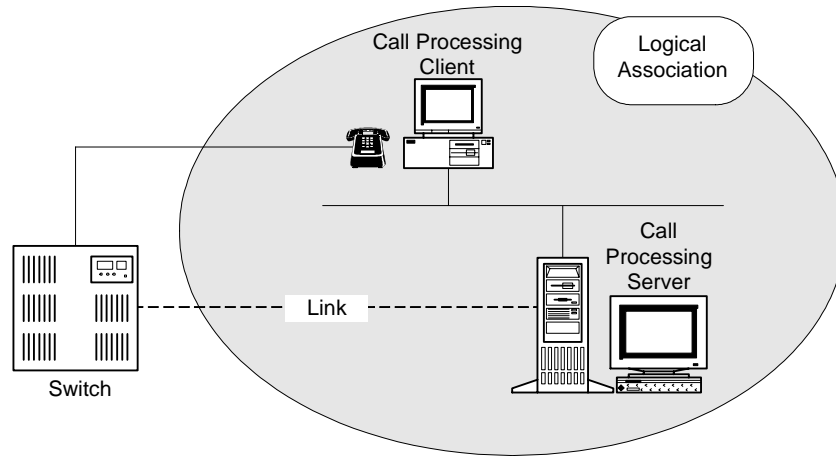
The Call Processing Software offers **third party call control**. This means that the call processing application does not directly control calls, and no direct connection is required between the client system and a telephony device. Calls are controlled jointly by the call processing server, acting as the "third party", and the switch. The call processing client exchanges messages with the server across a network connection, and the server exchanges messages with the switch.

How does this work with the Call Processing Software?

- The call processing server has a connection to at least one switch. This connection is identified by a logical communications path known as a **link**. You set up links when you configure the server.
- A call processing application creates a logical association between itself and:
 - A telephony device on a switch. A telephony device could be a telephone or a logical identity, such as an Automatic Call Distributor (ACD) queue.
 - A link to the switch (configured on the call processing server).
 - The call processing server itself.

Figure 1-2 shows the logical association between the call processing application on the client PC, a telephony device, the switch and the call processing server.

Figure 1-2 Associating the Application with a Device and a Link



1.3 Call Processing Applications

Using the call processing API, you can write applications that perform a wide range of telephony activities. These include:

- Standard telephony activities, such as making, transferring, and receiving calls.
- Retrieving data relating to a call and displaying relevant information (known as screen pops). The information displayed could be about the caller, or about a requested service. The application could do this when a caller gives an identification number, but it could also do it automatically before the call is answered. For example, a caller may give an identity automatically through Automatic Number Identification (ANI), or may identify a service through Dialed Number Identification Service (DNIS).
- Intelligent call routing. Many business applications require calls to be routed to multiple agents, or multiple sites. Calls with associated data could be routed to agents (or sites) based on business rules established by the application — for example, agent availability, or skill or knowledge level.

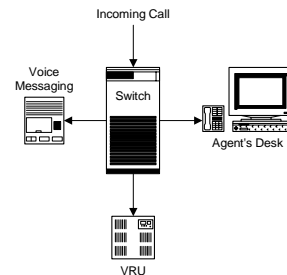
For example, an agent who takes customer orders by telephone can use a call processing application to collect a customer reference number from the caller

and display details of the customer's account. This can be done without any input from the agent; the customer uses their telephone keypad to enter their reference number, the call processing application uses these digits to look up the customer's account details and display them automatically on the agent's screen.

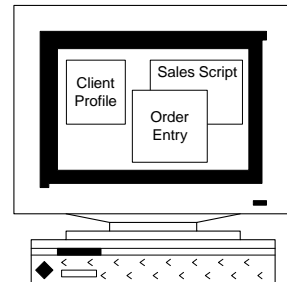
1.4 An Example Call Processing Application

Call Processing Software uses the features and functions of your telephone system and accesses the information, distribution, and management capabilities of your computing environment. This section describes an example call processing application for an order entry call center.

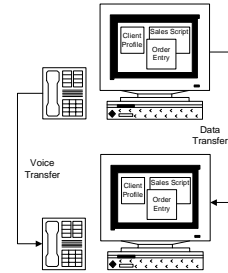
Based on information obtained from ANI or DNIS, the call-center application routes incoming calls from the voice switch to an agent's desk, a Voice Response Unit (VRU), or a voice messaging system. If ANI and/or DNIS are not in an application, information may be obtained by routing calls to the VRU and requesting information such as a customer account number.



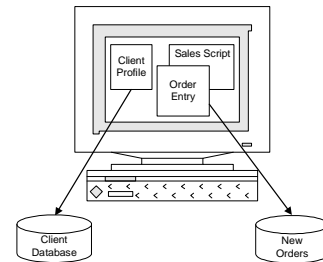
When a call arrives at an agent's desk, the call processing application displays call-related information. This information may be stored at various databases across the network, and can include customer records, product or service scripting information, account profiles, stored voice, document images, and so on. Screen prompts, or scripts, lead agents through appropriate responses and flag cross-selling opportunities.



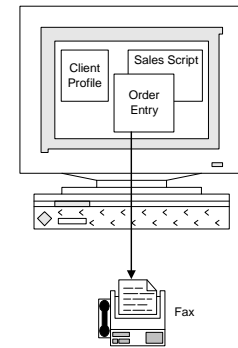
When an agent needs to consult with a supervisor or transfer a call to another department, the call processing application sends the call and relevant data, or a key to the data, to the appropriate staff member.



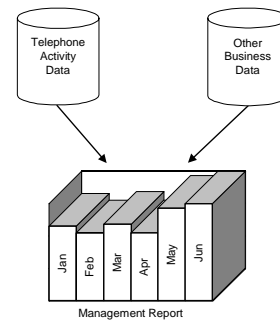
Agents update customer database records based on the outcome of call transactions. Information on orders is forwarded over the network for fulfillment by appropriate departments.



Completed order forms are sent from agents' desktop systems to fax devices that forward hardcopy confirmations to customers.



Statistical reports on call-center activity are compiled by merging data on telephone activity supplied by the Call Processing Software with information collected from databases and workflow information generated by the call-center application.



Using the Call Processing Software

This chapter describes the main features and functions of the Call Processing Software in more detail.

2.1 Call Processing Application Programming Interface (API)

The Call Processing Software provides two types of call processing API:

- The procedural API, for writing an application in C (or other procedural language). This requires Distributed Computing Environment/Remote Procedure Call (DCE/RPC) based development software.
- The API for the Java platform, for writing an application in the Java programming language. This requires a Java 2 Runtime Environment and the Java Software Development Kit.

You need to install the call processing API software on all the systems that you intend to use as client systems. You create your telephony application on a development system running the API, and then install the application on the other client systems.

2.1.1 Including CTI Features in Your Application

Using the call processing API, you can provide a wide number of CTI features, including:

- **Automatic Number Identification (ANI)/Calling Line Identification (CLID)** identifies the telephone number or extension number from which the call originated. Even before a call is answered, database lookups can be made and information displayed on the system of the agent whose telephone receives the call.
- **Dialed Number Identification Service (DNIS)** identifies the telephone number that the caller dialed. For example, customers may use different telephone numbers for placing orders or reporting a fault. Their calls can be routed to the appropriate device, and the call processing application can use the dialed number and display either the order entry or field service form on the agent's screen.

- **Voice Response Unit (VRU), or Interactive Voice Response (IVR),** presents callers with a voice menu of customer options. Callers can select an option either by speaking or by pressing touch-tone digits; the call processing application then transfers the call to the appropriate service. For example, a customer can obtain the balance of their current account or transfer money from one account to another.
- **Call/Data Transfer.** When a telephone call is transferred, any details taken by the agent can be transferred with the customer data that has already been retrieved. For example, if a customer places an order and then wants to be transferred to the accounts payable department, the customer's order information can be transferred too.
- **Voice Mail** enables a caller to leave a message with the appropriate person at any time of day. To select an option, the caller enters digits which can be used to identify the relevant voice mail account. Depending on the switch, a call processing application can control the voice mail greeting, collect digits entered by the caller, and transfer the call to another number.
- **Call routing** enables calls to be routed to specific agents, groups or sites, with rules established by the application. For example, you can use this to identify important customers and prioritize their calls, or to ensure that a customer is always connected to the same agent or with a specially qualified agent.
- **Auto Dialing,** including preview dialing and predictive dialing. With preview dialing, the agent instructs the application to dial a number after viewing the customer data. With predictive dialing, the application handles high-volume call processing, and dials a string of numbers for a group or pool of agents.
- **Management Reporting.** The application can use information provided by the telephone system (number of calls, busy hours, agent statistics, queue time, and so on) and the computer system (how many orders, who ordered, what was ordered, and so on), and merge it in a single comprehensive report.

2.1.2 Testing Your Application During Development

The CTC Test program can perform the sequence of actions you expect your call processing application to take against a supported switch. You run CTC Test on a call processing client system.

CTC Test provides you with functions to help isolate problems that occur during application development, test the validity of application call sequences within a specific configuration, and verify functions and events supported by the switch.

2.1.3 Management API

The Call Processing Software includes an open management API for creating management and monitoring applications. This lets you develop your own management application, as an alternative to using the supplied Control Program (see Section 2.2.2).

2.2 Call Processing Server

The job of the call processing server is to provide the link between business applications and the telephone environment. It provides the single point of contact between one or more clients and the switching environment.

Applications interface with call processing server using the call processing API; the server in turn interfaces with the CTI link of the switching environment.

The call processing server:

- Receives telephony requests from client's call processing applications, converts these requests to a switch-compatible protocol and then forwards them to the switch. When the switch responds, the call processing server returns the results to the clients.
- Detects telephony events and distributes information to any call processing clients requesting it.
- Manages the flow of telephony service requests and status messages between the server and application systems. This gives application developers the ability to implement complete telephony routing, monitoring, and call control functions in their applications.

The call processing server can communicate with a wide range of popular switches and client operating systems.

2.2.1 Configuring the Server Software

The Call Processing Software provides three GUI configuration utilities:

- Configuration Program. This is the main configuration utility. You use this to configure communications links between the server and one or more switches. You also use it to modify server options and link details, and to delete links.
- Distributed Data Setup Program. You use this to configure the distributed data feature. You need to run this program on each call processing server that will handle (store or receive) distributed data. See Section 2.3.1 for more information.

- **Authorization Setup Program.** You use this to define the users authorized to access telephony devices, the devices they can access and other security information. See Section 2.3.2 for more information.

2.2.2 Managing the Server Software

The Call Processing Software provides the following management and troubleshooting features:

- Call Processing Software Control Program
- Tracing
- Event logging
- Call Processing Software Problem Solving and Monitoring Help

2.2.2.1 Call Processing Software Control Program

The Control Program is a GUI program that enables you to monitor and control the call processing server, and the communications link between the server and a switch. You can use the Control Program to:

- View information about the server.
- Show information about the link between the server and a switch.
- Turn the link between the server and the switch on or off.
- Control tracing functions, including the numbers and types of trace files.
- Temporarily change the setting for the maximum number of monitored channels over the link from call processing clients to assigned devices.

2.2.2.2 Tracing

Tracing can record details of any or all of the following:

- Call processing data that passes between clients associated with a link and the call processing server.
- RPC and Java calls between servers (only available if your license supports distributed data between call processing servers).
- Protocol data on the link to the switch.

You can set up tracing to auto start when the server restarts, or to run temporarily until the next server restart. Once you start tracing, the trace information is formatted and written to trace files on the server.

2.2.2.3 Event Logging

The Call Processing Software logs application events that enable you to monitor use of the call processing server and its communication with the switch. You look at the events using the event logging procedures on your call processing server system. For example, on a Windows system, you would look in the Event Viewer Application Log for CtcServer events.

2.2.2.4 Problem Solving and Monitoring Help

This is an online help file intended to assist with problems you may encounter when installing, configuring or running the Call Processing Software. The help file lists some of the most common symptoms that you may see. You click on a symptom to go to a list of problem solving steps.

The Problem Solving and Monitoring Help also provides information about event logging and events, tracing and trace files, and Intel support for problems.

2.3 Special Server Features and Functions

The Call Processing Software includes a number of special features and functions, including:

- Server-to-server distributed data
- Security through device level authorization
- Client/server communication through Web servers

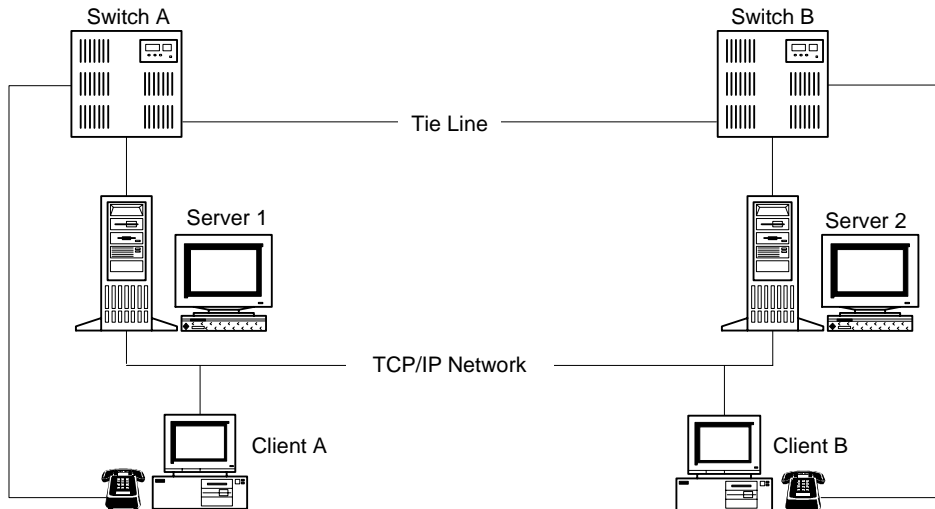
2.3.1 Server to Server Distributed Data

The Call Processing Software **distributed data** feature enables data associated with a call to be transferred between call processing servers connected to different switches. This means that if the call is transferred from one switch to another, the associated call data information is transferred with the call.

Note that this feature is not supported with all Call Processing Software licenses.

Figure 2-1 shows an example server-to-server distributed data configuration.

Figure 2-1 Example Distributed Data Configuration



1. A call arrives from the public network (PSTN) at an agent's extension on Switch A.
2. The agent's client application on Client A uses Automatic Number Identification (ANI) or Dialed Number Identification Service (DNIS) to perform a database lookup.
3. The application applies data to the call. Server 1 stores the call data from this point on, even when the call leaves the switch.
4. The call is transferred to Switch B.
5. The call arrives at an agent's extension on Switch B.
6. The application data is made available to Server 2 from Server 1.
7. The application on Client B receives a call information event that includes the application data. The data can be used to look up additional database information, customer records, and so on.

2.3.2 Security with Device Level Authorization

The Call Processing Software supports device level authorization (DLA), a type of access control that enables you to control user access to telephony devices. You can define:

- The telephony devices to which each user is allowed access; for example, you could define a range of DNs for each user.

- Optionally, a password for each user.
- The type of access a user is allowed for each device. This can be either full access or monitor access.
- The client system(s) from which they are allowed access to devices.

When you have configured users with their authorization details, the information is stored in an authorization database. No users will be allowed access to devices unless their information is stored in the authorization database.

There are two methods for configuring authorized users:

- Using the GUI application, Authorization Setup Program. This automatically adds users to the authorization database.
- Creating a formatted text file of users with authorization information for each user, and importing the file into the authorization database.

2.3.3 Client/Server Communication Through a Web Server

The Call Processing Software can work together with a Web server to allow Call Processing Software messages to pass through a firewall.

The Call Processing Software uses the Standard Object Access Protocol (SOAP) to translate the messages from binary format to XML format so that they can traverse the firewall, and then translate them back to binary format once they have passed through the firewall. SOAP is a protocol that uses XML for invoking methods on servers, services, components and objects. SOAP is a World Wide Web Consortium (W3C) working draft.

The Call Processing Software provides two configurations that use SOAP:

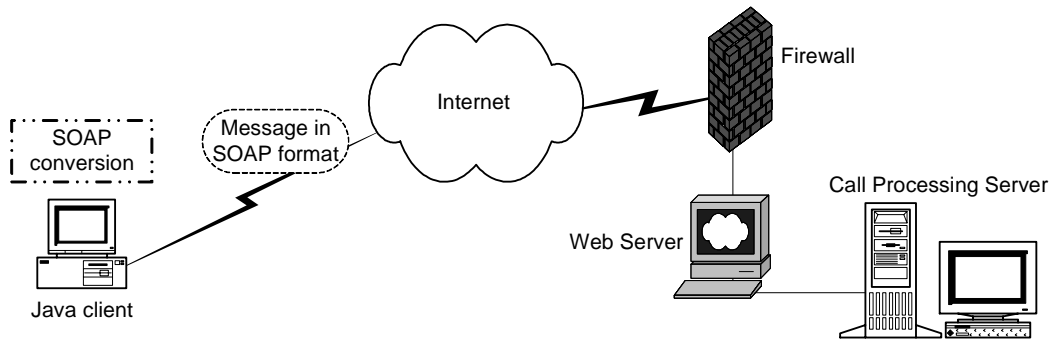
- External call processing clients use the Java call processing API to communicate with the server.
- Call processing servers exchange distributed data.

Note the following:

- In order for clients to use SOAP to communicate with servers, they must be using the Java API.
- In order for server to use SOAP to exchange distributed data, the servers must be using the Java RMI interface.
- Only a subset of Java call processing API methods are supported for use with SOAP. Refer to the Release Notes for a list of supported methods.

Figure 2-2 shows an example Java client configuration, with the original message translated into SOAP format on the client.

Figure 2-2 Using the Web for Client/Server Communication



2.4 Call Processing Software Additional Interfaces

Call Processing Software supports additional interfaces to the following:

- Windows Telephony Application Programming Interface (TAPI), Version 2.1
- Microsoft ActiveX control

These additional interfaces are not included with the Call Processing Software and you should contact Intel if you want to obtain them. For more information, see the Intel web site at <http://www.intel.com>.

Note: Only a subset of Call Processing Software features are supported for these interfaces.

2.5 Using Call Processing Software with Network Call Control Software

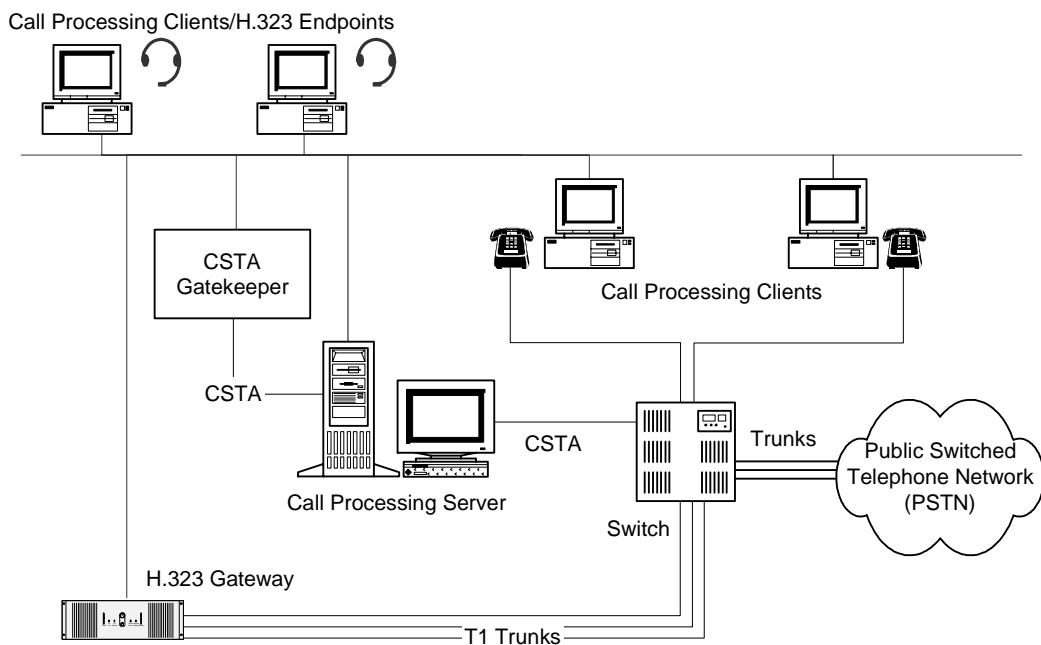
The Call Processing Software can work in conjunction with Intel's *Network Call Control Software* to monitor and control calls in a mixed PBX and IP telephony environment. Network Call Control Software has two components:

- CSTA Gatekeeper – An H.323 gatekeeper that can be used in an IP telephony network or mixed IP/PBX telephony network to support IP-based call handling and management.
- Software ACD – Software that provides Automatic Call Distributor (ACD) functions in an IP telephony network or mixed IP/PBX telephony network.

With Network Call Control Software, call processing applications handle calls over an IP network or a circuit-switched network in just the same way. For example, when a user places a call from their call processing application, the call could be made through the company's PBX or across an IP network without the user knowing which environment is used.

Figure 2-3 shows a combined Call Processing Software and CSTA Gatekeeper network.

Figure 2-3 Call Processing Software and the CSTA Gatekeeper



In this network, call processing clients are registered as H.323 endpoints. Two CSTA communications links are configured on the call processing server: one to the switch and another to the CSTA Gatekeeper.

The same call processing application is running on both sets of clients. However, when an agent uses the application to make a call from the call processing client/H.323 endpoint, the call can be routed through the IP telephony network to the switch.

Supported Environments

This chapter provides details of the platforms, switches, protocols, and interfaces that Call Processing Software supports.

3.1 Supported Platforms

Table 3–1 shows the platforms supported by the Call Processing Software. For details of which versions are supported, refer to the *Intel NetMerge Call Processing Software Installation and Configuration Guide*.

Table 3–1 Call Processing Software Supported Platforms

Call Processing Software	Supported Operating Systems or Environments
Call processing server	Windows NT† (Workstation or Server) Windows 2000 Windows XP Sun† Solaris† ¹
Call processing client API	HP-UX† Java 2 Runtime Environment OpenVMS Alpha Sun Solaris Tru64 UNIX Windows 9x Windows NT (Workstation or Server) Windows 2000 Windows XP

¹For details of availability and latest release, contact Intel.

3.2 Supported Switches

Call Processing Software supports applications linked to a large number of popular switches, implementing both industry standard and proprietary protocols:

- The Call Processing Software implements the industry standard Computer Supported Telecommunications Applications (CSTA) Phase I, Phase II and Phase III protocols. CSTA protocols are defined by ECMA, a standards body for information and communication systems. The implementation of CSTA allows any manufacturer to provide a link to Call Processing Software from a CSTA-compatible switch.

Example CSTA switches supported by Call Processing Software are:

- Ericsson† MD110 (CSTA Phase I)
- Alcatel† 4400 (CSTA Phase I and Phase II)
- Siemens† Hicom† 300E (CSTA Phase I, Phase II, and Phase III)

For more information about supported switches, contact Intel.

- Switches supported by Call Processing Software using proprietary link protocols are:
 - Avaya† DEFINITY† range of communications systems
 - Nortel† Meridian 1† switches

3.3 Supported Network Protocols

Table 3–2 lists the supported network protocols for the data network linking call processing clients with the call processing server.

Table 3–2 Supported Network Protocols

Client	Network Protocol
HP-UX	TCP/IP
Java 2 Runtime Environment	TCP/IP
OpenVMS	TCP/IP
Sun Solaris	TCP/IP
Tru64 UNIX	TCP/IP

Table 3–2 Supported Network Protocols (Continued)

Client	Network Protocol
Windows 9x	Named Pipes
	NetBIOS† over NetBEUI
	NetBIOS over TCP/IP
	Novell† SPX
	TCP/IP
Windows 2000/ Windows NT/ Windows XP	Local RPC
	Named Pipes
	NetBIOS over NetBEUI
	NetBIOS over TCP/IP
	TCP/IP

3.4 Additional Interface Software Required

Some platforms require that you install additional software to support:

- The Distributed Computing Environment (DCE) and Remote Procedure Call (RPC) services.
- The Java 2 Runtime Environment (JRE) (which provides the Remote Method Invocation (RMI) interface).

Call Processing Software requires either or both of these to support the interface between the call processing server and the call processing clients, and to support application development. However, in some cases these are not provided by, or included in, the base operating system or environment software.

For DCE/RPC, Table 3–3 lists the call processing client platforms and indicates if you need to add software in each case. Refer to the *Intel Netmerge Call Processing Software Installation and Configuration Guide* for details of software product names and versions.

Table 3–3 Additional DCE/RPC Software Required

Call Processing Client	Additional Software Needed
HP-UX	Yes
Java 2 Runtime Environment	Not applicable
OpenVMS	Yes

Table 3–3 Additional DCE/RPC Software Required (Continued)

Call Processing Client	Additional Software Needed
Sun Solaris	Yes
Tru64 UNIX	Yes
Windows 9x	No
Windows NT	No
Windows 2000	No
Windows XP	No

For Java, the call processing API for Java must be run in a Java Virtual Machine (JVM) supported by a Java 2 Runtime Environment which provides the RMI interface. This environment may be provided by a browser already installed on your system, or you may need to install plug-in software to provide the level of support required. Before you can run networked Java applications, your system must have a JRE installed.

3.5 Portability

Most of the functions from the call processing API are supported by the telephone switches and links described in Section 3.2. If your application is programmed to use these common functions, it can be ported across different telephone switches.

In addition, the common call processing API can be ported across the supported computer platforms. For more information, refer to the *Intel NetMerge Call Processing Software C Programming Guide* and the *Intel NetMerge Call Processing Software for the Java Platform* online documentation.

Index

A

ACD, 1-2, 2-8
ActiveX controls, 2-8
ANI, 1-3, 2-1
Application
 call processing, 1-2
 features, 1-3
Application Programming Interface, 2-1
Authorization database, 2-7
Authorization for users, 2-6
Authorization Setup Program, 2-4, 2-7
Auto Dialing, 2-2
Automatic Call Distributor
 See ACD
Automatic Number Identification
 See ANI

C

Call control, third party, 1-2
Call prioritization
 See Call routing
Call Processing API, 2-1
Call processing application, 1-2
 example, 1-4 to 1-5
 features, 1-3
Call processing Application Programming
 Interface, 2-1
Call processing client
 See Client

Call processing server
 configuration, 2-3
 definition, 1-1
 description, 2-3
Call Processing Software
 code portability, 3-4
 definition, 1-1
 network protocols, 3-2
 platforms, 3-1
 switches, 3-2
Call routing, 1-3, 2-2
Call/Data transfer, 2-2
Calling Line Identification, 2-1
CLID
 See Calling Line Identification
Client
 definition, 1-1
 installing call processing API on, 2-1
 Java, 2-7
 systems supported, 3-1
Code portability, 3-4
Computer Telephony Integration (CTI), 1-1
Configuration Program, 2-3
Control Program, 2-4
CSTA
 Phase I, 3-2
 Phase II, 3-2
 Phase III, 3-2
CSTA Gatekeeper, 2-8 to 2-9
CTI
 See Computer Telephony Integration

D

Data transfer, 2-2
DCE, 3-3
DD
 See DNIS
DEFINITY switch, 3-2
Device, 1-2
Device level authorization, 2-6 to 2-7
Dialed Digits
 See DNIS
Dialed Number Identification Service
 See DNIS
Distributed Computing Environment
 See DCE
Distributed data, 2-5 to 2-6
 use of SOAP, 2-7
Distributed Data Setup Program, 2-3
DNIS, 1-3, 2-1

E

Event logging, 2-5

F

Firewall, passing SOAP messages through, 2-7

G

Gatekeeper
 See CSTA Gatekeeper

H

H.323, 2-8 to 2-9
 endpoints, 2-8

I

Interactive Voice Response (IVR), 2-2

J

Java
 call processing API, 2-7, 3-4

Java 2 Runtime Environment

See JRE

Java client

 use of SOAP, 2-7

Java Virtual Machine

See JVM

JRE, 3-3

JVM, 3-4

L

Link

 definition, vii, 1-2

M

Management reporting, 2-2

Meridian 1 switch, 3-2

N

Network Call Control Software, 2-8 to 2-9

Network protocols, 3-2

P

Platforms, 3-1

Portability

 of Call Processing Software code, 3-4

Predictive dialing, 2-2

Preview dialing, 2-2

Problem solving, 2-5

R

Remote Procedure Call

See RPC

RMI, 2-7

RMI interface

 for JRE, 3-3

RPC, 3-3

S

Screen pop, 1-3

Server

 definition, 1-1

Service requests, 2-3

SOAP

 configurations, 2-7

Software ACD, 2-8

Standard Object Access Protocol (SOAP), 2-7

Status messages, 2-3

Switches, 3-2

 supported, 1-1

T

TAPI, 2-8

Telephony Application Programming Interface

See TAPI

Telephony events, 2-3

Third party call control, 1-2

Tracing, 2-4

Transferring call data, 2-2

V

Voice mail, 2-2

Voice Response Unit (VRU), 1-4, 2-2

W

Web server, 2-7

Windows 95

See Windows client

Windows 98

See Windows client

Windows TAPI

See TAPI

X

XML, 2-7