HEWLETT PACKARD

Applied Computerized Telephony (ACT)

Technical Data

HP 32045A ACT-CP Server
HP 32046A ACT API-HP 9000
HP 32077A ACT API-HP 3000

## ACT Call Processing Products for Northern Telecom DMS-100 Central Office Switches

A new generation of applications to leverage the integration of voice and data technologies is now available for Centrex users. The advanced call processing capabilities of digital Central Office switches can now be combined with the open applications environments of Hewlett-Packard computers via intelligent switch-to-computer interfaces. The resulting increases in productivity and revenues are benefits especially suited to telephone intensive environments such as customer service/support and telemarketing.

Hewlett-Packard integrates the voice and data environments with the Applied Computerized Telephony (ACT) Call Processing products. The ACT Call Processing Server is a server that interfaces and manages communications between Central Office switches and Hewlett-Packard computers. ACT Application Programming Interfaces (APIs) facilitate the integration of the new ACT capabilities into new and existing computer applications.

Features

Applications, HP 3000 and HP 9000 computer-based, can utilize the ACT Call Processing Server and an ACT Applications Programming Interface (API) to provide the following types of capabilities:
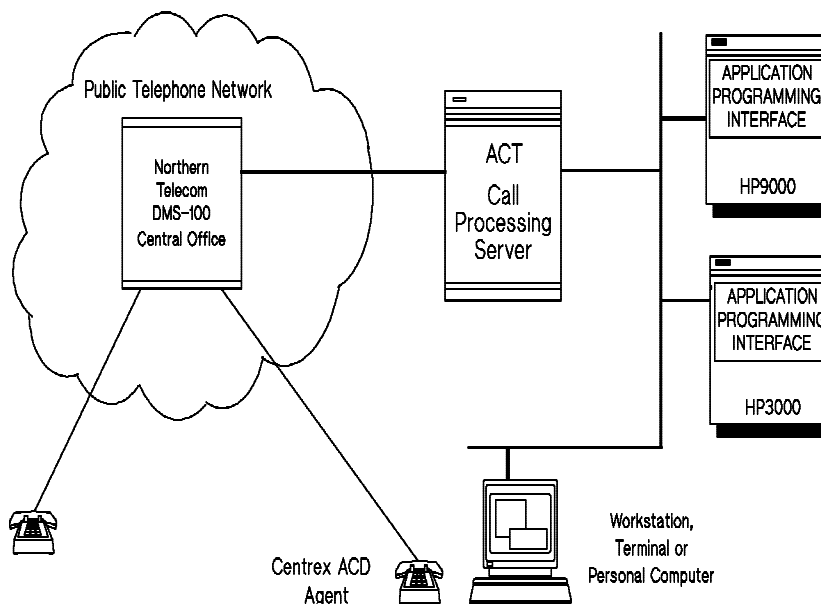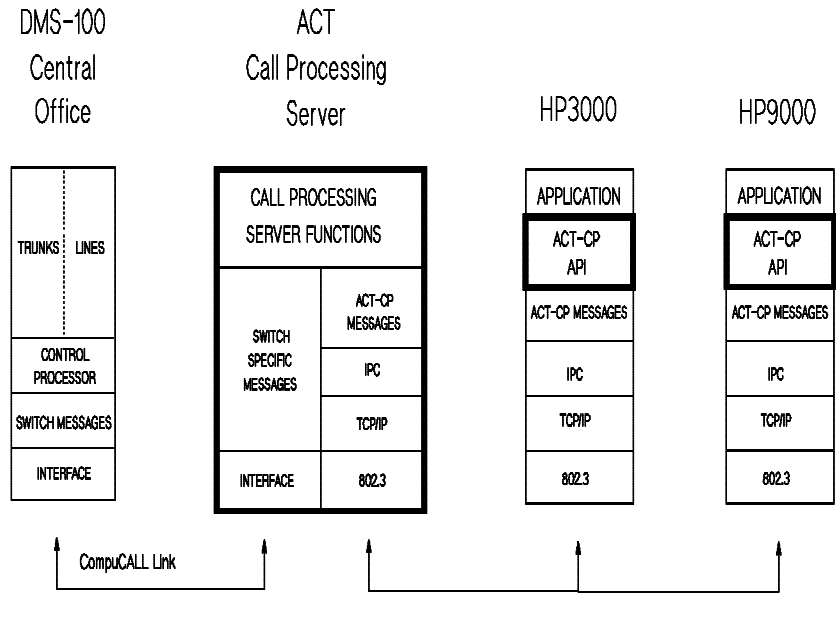
Inbound Call Information

Information passed through the public telephone network allows the caller's voice call and associated data screen to be presented simultaneously to an agent. The caller's telephone number and the number that was dialed is passed to computer applications. Applications can then identify the caller (by their calling number) and the purpose of the call (from the telephone number that was dialed). This enables the automatic delivery of a telephone call and product-specific data to a terminal or workstation simultaneously as the telephone rings.

Computerized Call Processing

Commands passed from computer applications instruct the switch to perform call processing functions such as make a call, disconnect a call, forward a call. This allows application controlled call routing, based on inbound information and, automated dialing from numbers in a computer database.

DMS-100 Central Office

TRUNKS	LINES
CONTROL PROCESSOR	
SWITCH MESSAGES	
INTERFACE	

ACT Call Processing Server

CALL PROCESSING SERVER FUNCTIONS	
SWITCH SPECIFIC MESSAGES	ACT-CP MESSAGES
	IPC
	TCP/IP
INTERFACE	802.3

HP3000

APPLICATION
ACT-CP API
ACT-CP MESSAGES
IPC
TCP/IP
802.3

HP9000

APPLICATION
ACT-CP API
ACT-CP MESSAGES
IPC
TCP/IP
802.3

CompuCALL Link

Outbound Calling

ACT increases productivity in outbound calling environments. With automated dialing, applications agents proceed from one active call to the next, and no time is wasted by manually dialing numbers, listening to busy signals, and unanswered ringing. This results in substantial increases in agent productivity.

Industry-Specific Applications

ACT provides a tool set that customers can use to enhance the capabilities of their existing applications. This tool set has also been used by numerous independent software vendors who offer custom applications for specific industries. Software vendors with applications for the financial services, distribution, customer service and catalog sales industries have applications that utilize ACT. For a complete list of these software vendors who have ACT compatible products contact your local HP Sales Office.

Functional Description

Command and status information is passed between HP computers and The DMS-100 Central Office over the CompuCALL Link, an intelligent messaging interface. Computer applications use the ACT Call Processing Server and APIs to originate, answer, and manipulate telephone calls.

Various telephone switch manufacturers provide messaging interfaces on their switches. Customer premise switches, known as Private Branch Exchanges (PBXs) and Central Offices (COs) are being

equipped with these switch-to-computer interfaces. Standards committees are currently working to evolve these interfaces into a single industry standard. Northern Telecom's CompuCALL Link, interface is modeled after the SCAI (switch-to-computer applications interface) standard. Hewlett-Packard will adhere to these industry standards as they are developed.

The Call Processing Server connects to the telephone switch via the CompuCALL Link and invokes the required function as requested by the client applications. The server tracks telephone call status information in the switch and session status information in the computer applications, and makes the logical association between the telephone call and terminal session at the desktop.

Standard IEEE 802.3/Ethernet and TCP/IP networking are used for communications between the host applications and the ACT Call Processing Server. The API software modules utilize industry standard interprocess communications to exchange messages with the Call Processing server.

Applications Programming Interfaces (APIs) are available for HP 9000 and HP 3000 computers to facilitate applications development. The APIs format application requests into ACT messages, and communicate with the

telephone switch via the ACT Call Processing Server. The server architecture is an implementation of Hewlett-Packard's Client/Server computing strategy, allowing multiple computer applications to utilize a single server to communicate with the telephone switch.

ACT Call Processing Server

The HP 32045A ACT Call Processing Server manages sessions between multiple computer applications and the call processing features of the switch. Information received from the switch, such as the telephone number of the incoming caller or station status is passed over to specific computer applications. ACT messages originating from computer applications are converted to CompuCALL messages in order to invoke the required functions on the switch, for example, to make a call or redirect a call.

The HP 32045A ACT Call Processing Server has been architected to interface Northern Telecom's DMS-100 Central Office switch. Other HP Technical Data sheets describe additional telephony switches supported by ACT.

Application Programming Interfaces (APIs)

The ACT APIs are designed to provide a simple means for the application programmer to incorporate call processing functions into their applications. The API also shields the programmer from the complex PBX dependent communication procedures and protocols. The APIs consist of sets of callable subroutines, such as Make Call, Connect Call, Route Inbound Call, Redirect Call, Hold Call, Answer Call, Event Monitor, and Drop Call. The APIs facilitate application development by providing an easy-to-use set of callable intrinsics for the application developers, shielding them from needing to understand the detailed workings of the telephony switch. The APIs also protect your application investment by buffering the application from changes in switch interfaces.

This is significant in circumstances where the one application is used with different manufacturers' switches. APIs allow the same application to be used, with both central office-based services and with customer premise equipment (CPE) PBXs.

ACT Product Requirements

Central Office

HP 32045A Option 101 is the ACT Call Processing Server designed to interface with the Northern Telecom DMS-100 Central Office switch or SL-100 Private Branch Exchange. The DMS-100 must be equipped with CompuCALL Link interface. These services are typically available under Centrex type service offerings from your local telephone company. For specific product information, contact your local operating telephone company.

Application Platform

The computer requirements include the appropriate ACT API software and ThinLAN interface for server communications.

On HP 3000 computer systems, order the HP 3000 LANLink, which includes the necessary TCP/IP and Net/IPC software.

On HP 9000 computer systems, Berkeley Sockets is required along with the appropriate LAN link for the 300, 400, 700 or 800 Series processor.

Consult your local HP Sales and Service Office for specific requirements for your system.

Installation Services

The ACT Call Processing Server and Application Programming Interfaces (APIs) are customer installable.

If a customer would like assistance in the implementation of ACT, a full range of consulting services for ACT Call Processing products are available. These ACT Consulting services include:

ACT Assessment

HP will work with you to determine the best way to use ACT in your technical environment. We will work with your telecom staff, MIS staff, and your other suppliers to assess your current environment and develop a detailed report of the required computer hardware/software and telecommunications equipment or services for an implementation of Applied Computerized Telephony. Upon completion of ACT Assessment, you will understand what needs to be done to implement an ACT solution, including a list of equipment you need to use the ACT technology.

ACT Project Management

Successfully implementing the infrastructure for an ACT application requires careful planning and coordination of people, equipment and, time from computer vendors, software applications providers, local operating telephone companie,s and/or long distance service providers. HP will develop and coordinate execution of a detailed schedule of tasks and activities that are required to successfully integrate your ACT installation.

ACT Application Assistance

The first step in creating an effective voice/data application is to design it properly. ACT-trained HP personnel will work with your application program developers to assist them in creating a new ACT application, or in modifying an existing application to meet the needs of the users. Where appropriate, HP can develop a phased implementation plan where the simpler aspects of ACT, such as using the originating caller's telephone number to automatically retrieve customer file information, can be initially implemented. Later, as user needs evolve and ACT programming expertise develops, more advanced ACT capabilities, such as high volume outbound calling, can be integrated into the application.

ACT Ongoing Support

After your successful ACT installation, Hewlett-Packard will provide day-to-day technical support of your ACT installation. The ongoing technical support of an ACT application requires a close working relationship with software, computing, local operating telephone companies, and/or long distance service providers. ACT Ongoing Support will provide you with fault isolation and problem management within your multivendor ACT installation.

All HP ACT Consulting Services are subject to local availability.

Ordering Information

ACT Components Summary

* **HP 32045A**
  ACT Call Processing Server for NT DMS-100 Central Office
  101   Preconfigured Server
* **HP 32046A**
  HP 9000 ACT Call Processing API
  AHO For Tier 1 SPUs
  AEL For Tier 2 SPUs
  AE5 For Tier 3 SPUs
  AE6 For Tier 4 SPUs
  AEN For Tier 5 SPUs
  AEP For Tier 6 SPUs
  AH1 For Tier 7 SPUs
  AEQ Series 300 Processors
  AHL Series 400/700 Processors

* **HP32077A**
  HP 3000 ACT Call Processing API
  310   For Tier 1 SPUs
  315   For Tier 2 SPUs
  320   For Tier 3 SPUs
  330   For Tier 4 SPUs
  335   For Tier 5 SPUs
  340   For Tier 6 SPUs
  350   For Tier 7 SPUs

Product Support

Software Support

Response Line
* **ACT Server (H2087A+H00)**
  #101   Northern Telecom PBX
* **HP3000 APIs**
  #200 Low-End MPE XL
  #201 Mid-Range MPE XL
  #202 High-End MPE XL
* **HP9000 APIs**
  #300   Series 300/400
  #301   Low-End S800
  #302   Mid-Range S800
  #303   High-End S800

Basic Line
* **ACT Server (H2088A+L00)**
  #101   Northern Telecom PBX

Hardware Support

* **Priority Plus (24 Hours)**
  ACT Server (32044A+02G)
* **Priority (8 a.m.–9 p.m.)**
  ACT Server (32044A+02A)
* **Next Day (8 a.m.–5 p.m.)**
  ACT Server (32044A+02C)
* **Scheduled**
  ACT Server (32044A+02L)
* **Installation**
  ACT Server (32044A+17A)
  HP3000 API (32077A+17A)
  HP9000 API (32046A+17A)

* **Software Update Service**
  ACT Server (H2089A+S00)
  #101   Northern Telecom PBX
  #AA0 1/4-inch Tape

Multivendor Network Support

* **NetAssure**
  ACT Server (32044A+16B)
  Northern Telecom PBX
  (50052P)

Consulting

* **ACT Assessment**
  HP ConsultLine
  (H2355A Module N)
* **ACT Project Management**
  HP ConsultLine
  (H2355A Module 9)
* **Application Assistance**
  HP ConsultLine
  (H2405A Module N)