



PERFORMER 3

CTI and Predictive Dialer System

1 – TABLE OF CONTENTS

- PERFORMER 3 CTI and Predictive Dialer System 1
- 1 – TABLE OF CONTENTS..... 2
- 2 – OVERVIEW 3
 - Basis..... 3
 - How it works ? 3
- 3 - SYNOPTIC 4
- 4 – CTI FEATURES FOR INBOUND..... 5
 - Automatic start of the campaign 5
 - Screen popup 5
 - Filtering of malicious calls..... 5
 - Call routing (optional)..... 5
- 5 - CTI FEATURES FOR OUTBOUND..... 6
 - Automatic dialing 6
 - Predictive dialing 6
- 6 – THE TSAPI GATEWAY 7
 - What is TSAPI ? 7
 - TSAPI Installation 7
 - Hardware requirements 7
- 7 – THE PERFORMER CTI MODULES 8
 - Description..... 8
 - Exchanges between Performer workstations and CTI modules 8
 - Hardware requirements 8
- 8 – DEFINITY CONFIGURATION 9
 - Hardware configuration..... 9
 - Software configuration 9

2 – OVERVIEW

Basis

The CTI (Computer Telephony Integration) and Predictive modules of Performer are not a stand-alone system, but has been developed to work with the Avaya / Lucent Definity PABX. So a link is required between the switch and the computer network, in order to exchange information.

For this, a TSAPI gateway must be installed on the network, and connected to the Definity switch.

Performer CTI modules offers many features, such as :

- Automatic starting of the campaign at call receiving
- Customer research and screen popup from the caller number identification
- Filtering of malicious calls
- Automatic dialing
- Predictive dialing
- Call routing

A basic Definity configuration need to be upgraded (hardware and software) to accept a CTI connection from a computer network. This configuration is detailed further.

On the computer network, additional workstations must be installed, to run the TSAPI gateway and the Performer CTI modules.

How it works ?

The Performer CTI modules works very closely with the PABX. Performer sends command to the PABX, (i.e. dial a number on an agent phone) and monitors some specific devices (agent phones or VDN¹ associated to the campaigns) to know what happens inside the PABX (i.e. on which agent phone a call has been delivered).

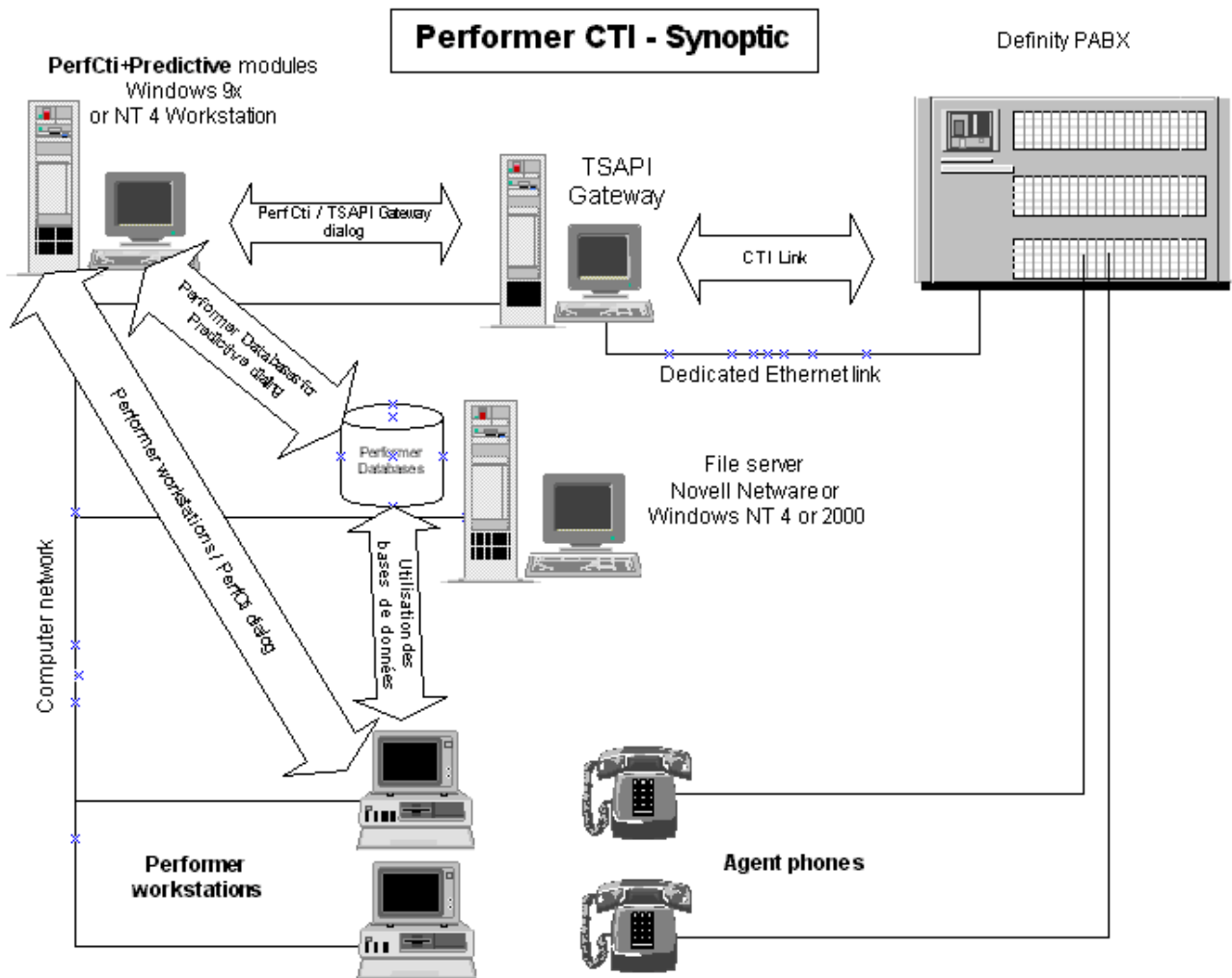
Performer maintains relation tables between the agent phone numbers and the agent workstations, to send events to the workstation when the corresponding phone rings for example.

CTI is very simple to configure with Performer : only the PABX VDN numbers of each campaign have to be entered in Performer. Each campaign is independent, some can be with CTI and others without CTI. Some outbound campaigns can be in automatic dialing, others in predictive etc. CTI can be very simply disabled, globally, or individually by campaign.

Although Performer itself don't require additional skill to use the CTI, a good knowledge of the Definity system is however needed, because many things have to be defined or checked for each campaign.

¹ a VDN is a logical device on the Definity, which is associated to the inbound trunk of a campaign. A script can be linked to a VDN to specify how the inbound calls will be routed to the agents logged in the campaign, through the automatic call distribution system (ACD) of the PABX.

3 - SYNOPTIC



4 – CTI FEATURES FOR INBOUND

Automatic start of the campaign

When a call is delivered on the an agent phone, the corresponding campaign can be started automatically. Agents don't need to select the campaign regarding the information displayed on the LCD screen of the phone, saving this way many times and errors when he has to answer to different campaigns alternatively.

Screen popup

With the screen popup functionality, Performer can search the customer record in the database (if it exists) from the caller phone number (if it is transmitted to the PABX), and pops up the corresponding informations on the screen.

The phone number of the caller can also be retrieved from the PABX by Performer, and stored into the customer record into the database.

Filtering of malicious calls

Many times a day, malicious calls are received by the agents, disturbing their work and causing useless traffic on the lines. With performer, the agent can flag an incoming call so as, if a call with the same phone number is received again later, it will be filtered and not transmitted to an agent. The time during which a call is flagged can be configured (from 1 to 99 hours) for each campaign, and the way a call is filtered is defined on the Definity, since Performer will route the flagged calls through a special VDN.

Call routing (optional)

This optional feature can be developed in Performer for a smart call routing. The PABX can't manage customer databases and has no possibility to route a call regarding a customer information. With Performer, customer databases can be associated to the PABX, and when a call is received, a search can be done in a database from the caller number or after the caller has previously type a identification code on the keyboard of his phone. If the caller is retrieved in the database, Performer can route the call through different VDN in the PABX, regarding conditions on the information stored in the customer record.

5 - CTI FEATURES FOR OUTBOUND

Automatic dialing

This basic feature is very simple to configure and save immediately many agent times and errors. Via the CTI, Performer asks the agent phone to dial the number, and analyze the result. If this number is busy or doesn't answer, the record is automatically recycled regarding the call-back configuration of the campaign. If there is an answer, the script is started.

The agent doesn't have to touch anything on his phone, because Performer drives it through the CTI.

However, even if this system can already improve the productivity, there no optimization on the no-answer calls. If many successively dials are without answer, the agent will wait...

Typically, the mean agent talk time per hour is between 30 to 35 minutes, as it is only about 20 to 25 minutes with manual dialing.

Predictive dialing

Predictive dialing is the only way to filter the no-answer or busy dials at the agent level. The system analyze in real time how many agents are available, and the ratio of the delivered calls. This way, the system can predict how many numbers it must dial to serve any waiting agent with a valid call. If necessary, the predictive will dial more phone numbers than the number of available agents. Sometimes unfortunately, there is more answers than predicted, and there is no enough available agents to serve all the calls, and some of them must be abandoned in this case. The rate of abandoned calls can be limited (usually from 5 to 10% of the calls) to avoid the degradation of the quality.

Predictive dialing boosts up the performances, and the mean agent talk time per hour can reach 40 to 45 minutes, and even 50 minutes per hour at the beginning of a campaign (at the end of the campaign, the system slows down because all the remaining numbers have already been dialed many times unsuccessfully and very few of them are answered).

6 – THE TSAPI GATEWAY

What is TSAPI ?

TSAPI is a CTI protocol co-developed with Lucent and Novell. The other main CTI protocols are TAPI from Microsoft and CT-Connect from Dialogic (an Intel company).

These protocols have been developed to make easier the dialog between a computer and a telephony switch. In practice, they act as a gateway between the computer network and the switch, and in most of the cases, these software are running on a dedicated workstation or server.

In fact, the workstations don't connect directly to the switch for CTI. They are connected on a CTI gateway which collects all the request through a unique connection on the switch. Usually, a CTI gateway is equipped with 2 Network interface cards, the first one connected to the computer network, the other one to the switch with a crossed cable.

TSAPI Installation

The TSAPI software can be provided by Avaya / Lucent or by Novell. The Avaya TSAPI software (Passage Way) is running on Windows NT, as the Novell TSAPI (Netware Telephony Services) is running on a Netware server, but there is no difference for the client workstations, because the available services are the same on the two platforms.

The link between the TSAPI gateway and the PABX is done via an Ethernet interface with the TCP/IP protocol. On the computer network, the link between the CTI modules of Performer and the TSAPI gateway can be done either with TCP/IP, either with IPX/SPX (the Novell Netware protocol).

Hardware requirements

- If the TSAPI modules are from Novell, a Netware 4.1x runtime (free) must be installed on a PC computer with the Netware Telephony Services 5 users of Novell. A P200 / 32Mb is enough in this case, because the Netware operating system don't need many hardware resources.
- If the TSAPI modules are from Lucent, a Windows NT (SP6) is required. A P400 / 128Mb must be planned in this case.

No data is saved on the disk on these computer, so it is not useful to plan server type machine with Raid 5 configuration for example, but 2 Nics are required. This computer must be installed in the technical office, near the PABX or near the file server.

7 – THE PERFORMER CTI MODULES

Description

On a basic CTI system, the agent workstations can connect directly to the TSAPI gateway. But for the predictive dialing service, an additional computer and software must supervise all the agent workstations and decide how many phone number has to be dialed regarding the agent status and the No answer/Busy/Delivered ratio. This acts as a dialing server on which the agent workstation are connected.

With Performer, in order to simplify the system and avoid the connection of the workstations to the predictive module and to the TSAPI gateway, the agent workstations are only connected to the computer on which the Performer CTI modules are running. This computer acts as a middleware, and only it is connected to the TSAPI gateway, saving this way costly TSAPI licenses.

A Performer CTI middleware can serve 40 to 50 agent workstations. If more workstations are needed on the network, a second or more Performer CTI middleware can be installed.

Exchanges between Performer workstations and CTI modules

To exchange CTI information, the Performer software running on the agent workstation connects to the Performer CTI middleware through a peer-to-peer connection, either with the TCP/IP protocol, either with the IPX/SPC protocol.

Hardware requirements

The Performer CTI and Predictive can be run on a Windows based PC, with either Windows 98SE, Windows NT 4 Workstation SP6, or Windows 2000 Professional SP1. Plan a P400 / 64Mb (with W98) or 128Mb (with NT or 2000). This station must be installed on the same site than the Performer agent workstations, because useful informations are displayed on the screen to manage the campaigns.

One computer with the CTI modules will be able to serve 40 to 50 Performer stations. For more workstations, plan another computer like this each 40 / 50 positions.

No data are saved on the disk on this computer, so it is not useful to plan server type machine with Raid 5 configuration for example.

8 – DEFINITY CONFIGURATION

Hardware configuration

The following modules are required on the PABX to use the CTI (with Performer or with other system)

- A TN 2170/2208 Lan Gateway card, for the connection of the PABX to the TSAPI gateway (Ethernet link).
- A TN744C Call Classifier card (at least). This card is required for the call classification (answer, no answer, busy, answer machine detection...). Additional card are required if more than 40 workstations are used with Predictive. One card is required for each 40 workstations.
- E1 cards and corresponding lines must be present. Predictive needs about 1,5 more outbound lines than the number of workstations, because the system dials many line simultaneously to reduce the agent wait time.

Software configuration

- Software CTI options must be enabled on the Definity. These options must be activated by Lucent through a remote connection.
- A Lucent technician must configure the ASAI link on the PABX at the same time than a Pgs technician configures the TSAPI gateway, in order to test the good working of all the system.

Warning ! The above description gives you a general information only. It can apply or not apply to your configuration. So you have to check with your Avaya / Lucent technical contact what is needed exactly on your switch.