DEVELOPING A CLIENT-BASED POLICY SUPPORT FOR H.323 CALL HANDLING

By
Joemelle J. Bacus
Anthea Mae R. Baltazar
Catherine R. Mingoy

SCHOOL OF ARTS AND SCIENCES
ATENEO DE DAVAO UNIVERSITY

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Joemelle J. Bacus
Anthea Mae R. Baltazar
Catherine R. Mingoy

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ABSTRACT

The need for policies to control calls is justified by the changing face of communications. An overview is given of a general architecture for a policy system for H.323 terminals. It is then shown how this is adapted for control of calls using the H.323 multimedia communications standard. Policy support for H.323 will be created in a terminal, thus eliminating the use of expensive gatekeepers. The core policy language has been specialized to deal with call control in general, and for H.323 in particular. Policies for H.323 illustrating how traditional features can be made to work more flexibly through use of policies will be used in the study.

Keywords:

H.323, IP, Internet Telephony, Policy, PSTN, VoIP

CHAPTER I

INTRODUCTION

1.1 Background of the Study

Communication has become increasingly invasive and intrusive. Calls may be received at work or at home, on fixed-line or mobile telephones. Calls may be placed using traditional or Internet telephony. Voice may be supplemented by video, data or other media. Call devices may include conventional telephones, mobile telephones, softphones, PDAs, voicemail, email message transfer agents, and web browsers. Anyone may call at any time about any subject. As a consequence of these factors, there is an urgent need to enable users and organizations to control their calls.

H.323 is a widely adopted set of standards for multimedia communication. Numerous supplementary services have been defined for H.323. Policies can emulate these services in a more flexible manner. Since communication is essential to the business industry it would be definitely useful to control their calls.

1.2 Statement of the Problem

The present study seeks to answer the main problem: How to develop a client-based policy support for H.323 call handling?

Specifically, the study aims to answer the following minor problems:

- What are the VoIP concepts of H.323?
- What are the disadvantages of feature as a network service that support call control? What are the advantages of policies call control?
- What are the existing policies supporting H.323 for call handling?
- How can an OLE Control Extension (OCX) be integrated into a policy system?
- How can an H.323 softphone client be enabled with policy support for call handling?

1.3 Objective of the Study

The study aims to develop a framework for developing a client-based policy support for H.323 call handling. The study's objectives further include presenting a methodology in developing this kind of system. Specifically, the study will...

- Identify the VoIP concepts of H.323.
- Identify the advantages of policy for call control in H.323.
- Identify the existing policy system for H.323 call handling.
- Identify the essential policies for call control in an H.323 softphone.

- Identify the steps for designing a policy architecture for call control in an H.323 softphone.
- Identify how to integrate the H.323 OCX to the policy system.
- Draft a framework for the planned system.
- Develop a prototype which is the implementation of the framework.

1.4 Scope and Limitation of the Study

The proponents of the study identified two technical outputs of the study. First is the policy architecture for an H.323 softphone. Second is a working prototype of the developed architecture. This application would implement the solution to the problems stated above. The proponents will be using C# as the programming language to develop the application.

The study will focus only on the H.323 signaling protocol for communications as stated in the problem statement. The policy support for H.323 call handling will be concentrated on policies for incoming and outgoing calls. It does not cover the handling of mid-call events as well as the resolution of policy conflicts for it is beyond the scope of the problem. Policies that will be evaluated by the prototype will only be those policies native at the client side. In addition, the policy language that will be used will be APPEL (the ACCENT Project Policy Environment/Language). The policies used in the study were based from the call control policies that were specified by APPEL. The policies that will be particularly used in the study are call forwarding policies, note availability policies, call rejection policies, and alternative

addresses call policies. If time will permit, the proponents would also include personal message for caller policies.

In order to prevent any future complications regarding the policy implementation, the proponents would like to note that the working prototype is only applicable within the context of a business firm or company and not on regular households. It shall be employed only on private networks and not for public use.

It shall be implemented in the Ateneo de Davao University Computer Laboratory. Furthermore, it shall be employed on computers connected on a Local Area Network (LAN). The working prototype shall be tested using the existing H.323 OCX developed by Mr. Phyll Martin Astorga to evaluate whether the output was a success.

1.5 Significance of the Study

The need for policies has been justified in view of the changing face of communications. Since H.323 is the most widely used communication protocol, a study on the policy support for H.323-enabled softphone is very significant especially for people in the business industry because they would be able to gain control over the calls that can be made or received by the company. It is also time-efficient because employing policy support can take the burden of answering unwanted calls without decreasing the Quality of Service. This would then result to the company's productivity because having policy support on calls would enable them to focus on more significant business matters. The client-based policy support is also cost-

efficient because there would already be no need for expensive gateways and gatekeepers, which were utilized in a server-based policy support.

1.6 Glossary of Terms

- H.323 - a protocol stack, which is a VoIP standard defined by the International Telecommunications Union (ITU) for communicating over data networks.
- H.323 OCX - a component program object that provides H.323 functionalities and supports ActiveX Controls.
- IP – Internet Protocol; Specifies the format of packets and the addressing scheme for the internet.
- Internet Telephony – A category of hardware and software that enables people to use the Internet as the transmission medium for telephone calls.
- Policy - interpreted as the rules for how calls should be handled.
- PSTN – Public Switched Telephone Network; Refers to the international telephone system based copper wires carrying analog voice data.
- Softphone - software-based phone for voice over IP (VoIP) that is installed in the user's PC.
- VoIP – Voice-over Internet Protocol; Category of hardware and software that enables people to use the internet as the transmission medium for telephone call by sending voice data in packets using IP rather than by traditional circuit transmission of the PSTN.