ON CONCERNING DESTINATION MOVEMENT IN PATH MAINTENANCE FOR AD HOC ON-DEMAND ROUTING

方宇綸、林浩仁

E-mail: 9127197@mail.dyu.edu.tw

ABSTRACT

AD HOC NETWORKS ARE CONSTRUCTED BY MOBILE NODES WITH WIRELESS CONNECTIONS THAT IS A WIRE -LESS NETWORK WITHOUT INFRASTRUCTURE OR CENTRALIZED MANAGEMENT.MAINLY,IT PROVIDES LIMITLES -S USERS WITH THE ABILITY TO CONSTRUCT WIRELESS NETWORKS AT ANY TIME.EVERY NODE HAS ROUTIN -G CAPABILITIES, WITH THE ABILITY TO DISCOVER AND MAINTAIN ROUTING INFORMATION. SINCE THE NETWORKS TOPOLOGY MAY BE CHANGED BY THE MOBILE NODES.SELECTING AN APPROPRIATE ROUTING PROT -OCOL IS CRUCIAL TO FIND A COMMUNICATIONS ROUTE FOR THE MOBILE NODE.THUS,ROUTING PROTOCOLS TAKE ON AN IMPORTANT ROLE.MANY RESEARCHERS HAVE DEVOTED TO DEVELOPE ROUTING PROTOCOLS IN AD HOC NETWORKS WITH LIMITED BANDWIDTH,AMONG WHICH CONSIDERATIONS OF BACKUP ROUTES AND MULTIP -LE ROUTES HAVE BEEN PROPOSED.BUT ALL OF METHODS ARE FOCUSED ON THE MOVEMENT OF INTERMEDIA -TE NODES.THE MOVEMENT OF SOURCE OR DESTINATION NODES ARE NOT ADDRESSED.THIS THESIS FOCUSE -S ON IMPROVING THE PERFORMANCE OF ROUTING PROTOCOLS,USING THE POPULAR AD HOC ON-DEMAND DIS -TANCE VECTOR (AODV) AS THE FOUNDATION.IT TAKES INTO CONSIDERATION THE MOVEMENTS OF THE SO -URCE OR DESTINATION NODES AND PRESENT AN EFFICIENT METHOD OF ROUTE MAINTENANCE. WITHOUT IN -CREASING THE CONTROL OVERHEAD,OUR APPROACH CAN INCREASE THE DELIVERY RATE OF DATA PACKETS. THE EXPERIMENTAL RESULTS SHOW THAT OUR METHOD IS EFFECTIVE FOR MAINTAINING THE NETWORK CONN -ECTION.

Keywords : ROUTING PROTOCOL，BACKUP ROUTE， MULTIPLE ROUTE，AD HOC WIRELESS NETWORKS ，PATH MAINTENANCE。

Table of Contents

REFERENCES

[1]E. M. ROYER AND C. K. TOH, "A REVIEW OF CURRENT ROUTING PROTOCOLS FOR WIRELESS AD HOC NETWORKS," IEEE PERSONAL COMMUNICATIONS, VOLUME:6, ISS. 2 , PP.46-55, APR. 1999.

[2]C. C. CHIANG, "ROUTING ON CLUSTERED MULTIHOP MOBILE WIRELESS NETWORKS WITH FADING CHAN -NEL," PROC. IEEE SICON '97, PP.197-211, APR. 1997.

[3]S. MURTHY AND J. J. GARCIA-LUNA-ACEVES, "AN EFFICIENT ROUTING PROTOCOL FOR WIRELESS NE -TWORKS," ACM MOBILE NETWORKS AND APP. J. SPECIAL ISSUE ON ROUTING IN MOBILE COMMUNICA -TION NETWORKS, PP.183-197, OCT. 1996.

[4]C. E. PERKINS AND E. M. ROYER, "AD HOC ON-DEMAND DISTANCE VECTOR ROUTING," MOBILE COMP -UTING SYSTEMS AND APPLICATIONS, 1999. PROCEEDINGS. WMCSA '99. SECOND IEEE WORKSHOP ON , PP.90-100, FEB. 1999.

[5]D. B. JOHNSON AND D. A. MALTZ, AND J. BROCH "DYNAMIC SOURCE ROUTING IN AD HOC WIRELESS NETWORKS(DSR)," MOBILE AD-HOC NETWORK WORKING GROUP, IETF INTERNET-DRAFT ,FEB. 2002.

[6]R. DUBE ET AL., "SIGNAL STABILITY-BASED ADAPTIVE ROUTING (SSA) FOR AD-HOC MOBILE NETWO -RKS," IEEE PERS. COMMUN., PP.36-45, FEB. 1997.
[7]S. J. LEE AND M. GERLA., "AODV-BR: BACKUP ROUTING IN AD HOC NETWORKS," IN PROCEEDINGS OF THE IEEE WIRELESS COMMUNICATIONS AND NETWORKING CONFERENCE (WNMC),PP.1311-1316,2000 [8]M. H. JIANG AND R. H. JAN, "AN EFFICIENT MULTIPLE PATHS ROUTING PROTOCOL FOR AD HOC NE -TWORKS," INFORMATION NETWORKING,PROCEEDINGS 15TH INTERNATIONAL CONFERENCE ON IEEE, PP. 544-549, 2001.
[9]C. M. CHUNG, Y. H. WANG AND C. C. CHUANG, "AD HOC ON-DEMAND BACKUP NODE SETUP ROUTING PROTOCOL," INFORMATION NETWORKING, 2001. PROCEEDINGS. 15TH INTERNATIONAL CONFERENCE PP. 933 -937, 2001.
[10]S. J. LEE AND M. GERLA, "SPLIT MULTIPATH ROUTING WITH MAXIMALLY DISJOINT PATHS IN AD H -OC NETWORKS," COMMUNICATIONS, ICC 2001. IEEE INTERNATIONAL CONFERENCE , VOLUME: 10 , PP. 3201 -3205, 2001.
[11]K. MARINA AND S. R. DAS, "ON-DEMAND MULTIPATH DISTANCE VECTOR(AOMDV) ROUTING IN AD HOC NETWORKS," PROCEEDINGS OF THE INTERNATIONAL CONFERENCE FOR NETWORK PROCOTOLS(ICNP),RIV -ERSIDE, NOV. 2001.
[12]S. TANENBANM, "COMPUTER NETWORKS," THIRD EDITION, PRENTICE HALL.2000.
[13]W. I. KIM, D. H. KWON AND Y. J. SUH, "A RELIABLE ROUTE SELECTION ALGORITHM USING GLOBA -L POSITIONING SYSTEMS IN MOBILE AD-HOC NETWORKS," COMMUNICATIONS, 2001. ICC 2001.IEEE INTERNATIONAL CONFERENCE, VOLUME: 10, PP.3191 -3195, 2001.
[14]C. E. PERKINS, E. M. ROYER AND S. R. DAS, " AD HOC ON-DEMAND DISTANCE VECTOR ROUTING", IETF INTERNET DRAFT (WORK IN PROGRESS), JAN, 2002.
[15]K. FALL AND K. VARADHAN, "THE NS MANUAL (FORMERLY NS NOTE AND DOCUMENTATION)" APRIL, 20 -02. (HTTP://WWW.ISI.EDU/NSNAM/NS)