

Advances in Mobility Management for IP Networks

Editors:

Aisha Hassan Abdalla Hashim

Othman Khalifa

Shihab A. Hameed



IIUM PRESS

INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA

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IIUM Press

Published by:

IIUM Press
International Islamic University Malaysia

First Edition, 2011
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Perpustakaan Negara Malaysia

Cataloguing-in-Publication Data

Aisha Hassan Abdalla Hashim, Othman Khalifa, Shihab A. Hameed: Advances in Mobility Management for IP Networks

ISBN: 978-967-418-140-6

Member of Majlis Penerbitan Ilmiah Malaysia – MAPIM
(Malaysian Scholarly Publishing Council)

Printed by :

IIUM PRINTING SDN.BHD.

No. 1, Jalan Industri Batu Caves 1/3

Taman Perindustrian Batu Caves

Batu Caves Centre Point

68100 Batu Caves

Selangor Darul Ehsan

Tel: +603-6188 1542 / 44 / 45 Fax: +603-6188 1543

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OPERATION OF CONTEXT TRANSFER PROTOCOL

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3.1 INTRODUCTION

The context transfer typically operates between a source node and a target node. A source node is a mobile node's previous access router and the target node is a mobile node's next access router. When context transfer operates, previous access router, next access router and mobile node communicate to each other accordingly. The previous access router transfers the contexts, the next access router requests contexts, and the mobile node sends a message to the routers to transfer contexts.

Context transfers give better performance for node based mobility. The key objectives of context transfer can be summarized as follows [1]:

- To reduce latency and packet losses.
- To avoid the re-initiation of signalling to and from the mobile node or to quickly re-establish context transfer-candidate services without requiring the mobile host to explicitly perform all protocol flows for those services from scratch.
- To provide an interoperable solution that supports various Layer 2 radio access technologies.

3.2 OPERATION

The context transfer is triggered when a handover takes place. This trigger provides the necessary information such as the IP addresses of the access routers, and the authorization to transfer context so that the contexts are recognized. The context transfer initiation messages include parameters needed to identify the source and target nodes, the list of feature contexts, and IP addresses for the contexts identification. The message to request context transfer data also contain an appropriate token to authorize the context transfer [1].

The context transfer operation is based on the time of the context transfer activation. It can be either started by a request from the mobile node or at the initiative of the access router. If the context transfer starts before the handover, and the mobile node is connected to the previous access router it is called predictive. While when context transfer starts after the connection of the mobile node to the next access router it is called reactive. The predictive and reactive operations of context transfer protocol are explained in details in [1].

In predictive handover [1], the trigger is either initiated by the previous access router (PAR) or the mobile node (MN). When it is initiated by the PAR it is called network controlled scenario. The predictive network controlled scenario is shown in Fig. 3.1.