Enabler Release Definition for W-DNS Version 1.0

Version 30-Oct-2002

Open Mobile Alliance
OMA-ERELD-W-DNS- v1_0-20021030-C

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Document History	
OMA-ERELD-W-DNS- v1_0-20021030-C	Draft
OMA-ERELD-W-DNS-v1_0-20021030-C	Current

Contents

1. Scope

The scope of this document is limited to the Enabler Release Definition of DNS according to OMA Release process and the Enabler Release specification baseline listed in section 5.

Although network interfaces are known by the IP addresses, humans work best using the name of the host. In the TCP/IP world, the Domain Name System (DNS) is a distributed database that provides the mapping between IP addresses and hostnames. DNS provides the protocol that allows clients to servers to communicate with each other. From an application's point of view, access to the DNS is through a *resolver*. The scope covers the functionality of the DNS client on the terminal, while remaining compliant with the IETF specifications listed in section 2.1. The behaviour of the DNS server is not specified, therefore Wireless Profiled DNS clients will be capable of performing DNS lookups with pre-existing DNS servers (i.e we impose no requirements on the server).

2. References

2.1   Normative References

[CREQ]   "Specification of WAP Conformance Requirements". Open Mobile Alliance™.
                              WAP-221-CREQ. URL:http//www.openmobilealliance.org/ *(To be replaced with proper
                              reference to new corresponding OMA document when approved)*

[RFC2119]   "Key words for use in RFCs to Indicate Requirement Levels". S. Bradner. March 1997.
                              URL:http://www.ietf.org/rfc/rfc2119.txt

[W-DNS]   "Specification for Wireless Profiled DNS" Open Mobile Alliance™.
                              OMA-WAP-DNS-v1_0. URL:http//www.openmobilealliance.org/

2.2   Informative References

[WAPARCH]   "WAP Architecture". WAP Forum™. WAP-210-WAPArch.
                              URL:http//www.openmobilealliance.org/

[W-HTTP]   "Wireless Profiled HTTP". WAP Forum™. WAP-229-HTTP
                              URL:http//www.openmobilealliance.org/

[W-TCP]   "Wireless Profiled TCP". WAP Forum™. WAP-225-TCP
                              URL:http//www.openmobilealliance.org/

3. Terminology and Conventions

3.1   Conventions

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in [RFC2119].

All sections and appendixes, except "Scope" and "Introduction", are normative, unless they are explicitly indicated to be informative.

The formal notation convention used in sections 8 and 9 to formally express the structure and internal dependencies between specifications in the Enabler Release specification baseline is detailed in [CREQ].

3.2   Definitions

Enabler Release –a collection of specifications that combined together form an enabler for a service area, e.g. a download enabler, a browsing enabler, a messaging enabler, a location enabler, etc. The specifications that are forming an enabler should combined fulfil a number of related market requirements.

Minimum Functionality Description – Description of the guaranteed features and functionality that will be enabled by implementing the minimum mandatory part of the Enabler Release.

KEY   DNSSec extension resource Record for distributing public keys of DNS network entities

Lightweight DNS An IETF compliant interpretation of DNS that minimises the use of radio and terminal resources

Provisioned DNS Server A DNS server that is provisioned as a point of contact for the DNS client

SIG   A DNSSec signature record

3.3   Abbreviations

ERDEF	Enabler Requirement Definition
ERELD	Enabler Release Definition
OMA	Open Mobile Alliance
DNS	Domain Name System
DNSSec	DNS Security
IETF	Internet Engineering Task Force
IP	Internet Protocol
RFC	Request for Comments
TCP	Transmission Control Protocol
WAP	Wireless Application Protocol
W-DNS	Wireless Profiled DNS
W-HTTP	Wireless Hypertext Transfer Protocol [W-HTTP]
W-TCP	Wireless Profiled TCP [W-TCP]

4. Introduction

This document outlines the Enabler Release Definition for W-DNS and the respective conformance requirements for clients and servers implementing claiming compliance to it as defined by Open Mobile Alliance across the specification baseline.

Although network interfaces are known by the IP addresses, humans work best using the name of the host. In the TCP/IP world, the Domain Name System (DNS) is a distributed database that provides the mapping between IP addresses and hostnames. DNS provides the protocol that allows clients to servers to communicate with each other. From an application's point of view, access to the DNS is through a *resolver*

Network service providers may choose not to install WAP Proxy Gateways, or allow usage patterns that circumvent the WAP Proxy Gateway.   Without the availability of a WAP Proxy Gateway, the WAP terminal is required to perform DNS lookup. This document seeks to support IP address resolution within the direct access scenario, as specified in the WAP Architecture specification [WAPARCH]. Architecturally this specification profiles the terminal and does not profile how the DNS server interacts with the DNS client, therefore Wireless Profiled DNS (W-DNS) clients will be capable of performing DNS lookups with existing DNS servers.

By controlling the behaviour of the DNS client on the terminal, the use of radio resources can be minimised. Effectively, the DNS client will prompt the type of response from the DNS service that is appropriate to the wireless network.

A lightweight DNS client will be recommended wherever possible - minimising footprint, memory and processor requirements. This specification will be particularly relevant to terminal software developers and network providers

5. Enabler Release Specification Baseline

This section is normative.

The following specifications comprise the DNS enabler release:

"OMA-WAP-DNS V1.0" [W-DNS]

6. Minimum Functionality Description for W-DNS

[This section is informative]

W-DNS enables the appropriate request/response behaviour when resolving domain names to IP addresses in the direct access architecture. W-DNS specification profiles the terminal, but it does not profile how the DNS server interacts with the DNS client**;** therefore**,** Wireless Profiled DNS (W-DNS) clients will be capable of performing DNS lookups with existing DNS servers. W-DNS resolvers must comply with the IETF specification as listed in W-DNS specification in order to interoperate with conventional and generic DNS Servers. In addition, the W-DNS resolvers must comply with the profile specification in the W-DNS to produce a lightweight protocol (i.e. a Wireless Profiled DNS).

A W-DNS client must at least implement a stub resolver, using recursive mode, in order to minimise the size of implementation and facilitate the delegation of the querying process to a Provisioned DNS server. Optionally a full service resolver, using iterative mode, may be supported.

7. Conformance Requirements Notation Details

This section is informative

The tables in following chapters use the following notation:

Item:
Entry in this column MUST be a valid ScrItem according to [CREQ].

Feature/Application:
Entry in this column SHOULD be a short descriptive label to the **Item** in question.

Status:
Entry in this column MUST accurately reflect the architectural status of the **Item** in question.
- M means the **Item** is mandatory for the class
- O means the **Item** is optional for the class
- NA means the **Item** is not applicable for the class

Requirement:
Expression in the column MUST be a valid TerminalExpression according to [CREQ] and it MUST accurately reflect the architectural requirement of the **Item** in question.

8. ERDEF for W-DNS - Client Requirements

This section is normative.

Table 1 ERDEF for W-DNS Client-side Requirements

Item	Feature / Application	Status	Requirement
OMA-ERDEF-DNS-C-001	DNS V2_1 Client	M	DNS:MCF

9. ERDEF for W-DNS - Server Requirements

This section is normative.

The DNS enabler does not specify server requirements.

Appendix A.   Change History   (Informative)

Type of Change	Date	Section	Description
Class 0	-Oct-2002		The initial version of this document.