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INTERNATIONAL STANDARD

**Information technology – UPnP Device Architecture –
Part 8-10: Internet Gateway Device Control Protocol – Local Area Network Host
Configuration Management Service**

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**INFORMATION TECHNOLOGY –
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**Part 8-10: Internet Gateway Device Control Protocol –
Local Area Network Host Configuration Management Service**

FOREWORD

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ISO/IEC 29341-8-10 was prepared by UPnP Implementers Corporation and adopted, under the PAS procedure, by joint technical committee ISO/IEC JTC 1, *Information technology*, in parallel with its approval by national bodies of ISO and IEC.

The list of all currently available parts of the ISO/IEC 29341 series, under the general title *Universal plug and play (UPnP) architecture*, can be found on the IEC web site.

This International Standard has been approved by vote of the member bodies, and the voting results may be obtained from the address given on the second title page.

ORIGINAL UPNP DOCUMENTS
(informative)

Reference may be made in this document to original UPnP documents. These references are retained in order to maintain consistency between the specifications as published by ISO/IEC and by UPnP Implementers Corporation. The following table indicates the original UPnP document titles and the corresponding part of ISO/IEC 29341:

UPnP Document Title	ISO/IEC 29341 Part
UPnP Device Architecture 1.0	ISO/IEC 29341-1
UPnP Basic:1 Device	ISO/IEC 29341-2
UPnP AV Architecture:1	ISO/IEC 29341-3-1
UPnP MediaRenderer:1 Device	ISO/IEC 29341-3-2
UPnP MediaServer:1 Device	ISO/IEC 29341-3-3
UPnP AVTransport:1 Service	ISO/IEC 29341-3-10
UPnP ConnectionManager:1 Service	ISO/IEC 29341-3-11
UPnP ContentDirectory:1 Service	ISO/IEC 29341-3-12
UPnP RenderingControl:1 Service	ISO/IEC 29341-3-13
UPnP MediaRenderer:2 Device	ISO/IEC 29341-4-2
UPnP MediaServer:2 Device	ISO/IEC 29341-4-3
UPnP AV Datastructure Template:1	ISO/IEC 29341-4-4
UPnP AVTransport:2 Service	ISO/IEC 29341-4-10
UPnP ConnectionManager:2 Service	ISO/IEC 29341-4-11
UPnP ContentDirectory:2 Service	ISO/IEC 29341-4-12
UPnP RenderingControl:2 Service	ISO/IEC 29341-4-13
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UPnP Document Title	ISO/IEC 29341 Part
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ISO/IEC 29341-8-10:2008
https://standards.iteh.ai/catalog/standards/sist/9f8c6bc9-87dc-4a0b-84ca-
baf47811f2a7/iso-iec-29341-8-10-2008

1.   Overview and Scope

This device definition is compliant with the UPnP Device Architecture version 1.0.

This service definition enables the remote control, monitoring, and configuration of a Dynamic Host Configuration Protocol (DHCP) and DNS server, serving a residential LAN. Variables specified in this service are derived from DHCP options[1] standardized in the Internet Engineering Task Force (IETF).

The *LANHostConfigManagement* is an OPTIONAL service specified in
urn:schemas-upnp-org:device:*LANDevice*,
one or more instances of which may be specified under the root device
urn:schemas-upnp-org:device:*InternetGatewayDevice*

NOTES:
- It is assumed that each DHCP server instance defined in the context of a *LANDevice* and modeled by this service, manages exactly one subnet. Changes / vendor extensions may be required to the specification if this assumption is not true.
- Currently this service does not model any DNS or Dynamic DNS specific functions.
- This service essentially performs administrative operations on the DHCP server component of an Internet gateway. As such, Out-of-Band mechanisms may be needed to enforce such as administrative mode and provide authentication and/or access control. Implementation details of such mechanisms are outside the scope of this document.

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[1] Refer to RFCs 2132, 2939 and 3011. Other RFCs or Internet drafts may also be applicable – Attributes from those documents may be implemented as vendor extensions.

2. Service Modeling Definitions

2.1. ServiceType

The following service type identifies a service that is compliant with this template:

> **urn:schemas-upnp-org:service:***LANHostConfigManagement:1*.

2.2. State Variables

Table 1: State Variables

Variable Name	Req. or Opt.[1]	Data Type	Allowed Value[2]	Default Value[2]	Eng. Units
DHCPServerConfigurable	R	boolean	1, 0	Not specified	N/A
DHCPRelay	R	boolean	1, 0	Not specified	N/A
SubnetMask	R	string	IP Address	Not specified	N/A
DNSServers	R	string	Undefined	Empty string	N/A
DomainName	R	string	<= 21 characters	Empty string	N/A
MinAddress	R	string	Undefined	Not specified	N/A
MaxAddress	R	string	Undefined	Not specified	N/A
IPRouters	R	string	Undefined	Empty string	N/A
ReservedAddresses	R	string	Undefined	Empty string	N/A
Non-standard state variables implemented by an UPnP vendor go here.	*X*	*TBD*	*TBD*	*TBD*	*TBD*

[1] R = Required, O = Optional, X = Non-standard.

[2] Values listed in this column are required. To specify standard optional values or to delegate assignment of values to the vendor, you must reference a specific instance of an appropriate table below.

NOTE: Default values are not specified in the DCP. A vendor may however choose to provide default values for SST variables where appropriate.

2.2.1. DHCPServerConfigurable

This variable enables the configuration of the DHCP server on the LAN interface. If set to 1, the DHCP server is configurable via actions defined in this service. If 0, the DHCP server configuration cannot be modified.

2.2.2. DHCPRelay

This variable indicates if the DHCP server performs the role of a server or a relay on the LAN interface. If this variable is set to 1, the DHCP server is configured to relay DHCP requests.

2.2.3. SubnetMask

This variable specifies the client's network subnet mask.

2.2.4. DNSServers

This variable specifies a comma-separated list of available DNS servers offered to DHCP clients. An empty string indicates that no servers are being offered.

2.2.5. DomainName

This variable sets the Domain name to provide to clients on the residential LAN connected to the LAN interface. An empty string means no domain name suggestion will be made.

2.2.6. MinAddress

This variable specifies the first address in the pool to be assigned by the DHCP server on the LAN interface.

2.2.7. MaxAddress

This variable specifies the last address in the pool to be assigned by the DHCP server on the LAN interface.

2.2.8. IPRouters

This variable specifies a comma-separated list of IP addresses of routers on this subnet. It is also referred to as DefaultGateway.

2.2.9. ReservedAddresses

This variable specifies a comma-separated list of addresses marked reserved from the address allocation pool. If the list is non-empty, specified addresses will not be assigned to clients on the residential LAN connected to the LAN interface. When this is empty, no addresses are excluded.

2.2.10.Relationships Between State Variables

If `DHCPServerConfigurable` is set to 0, other Set actions will return error code 501. If `DHCPRelay` is set to 1, the DHCP server will ignore other SST variable settings and forward DHCP requests upstream to another DHCP server.