
WANEthernetLinkConfig:1 Service Template Version 1.01

For UPnP™ Version 1.0
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1. Overview and Scope

This service definition is compliant with the UPnP Device Architecture version [1.0](#).

This service-type models physical and link layer properties of a WAN Ethernet interface used for Internet access on an *InternetGatewayDevice*. A gateway device that offers Internet connectivity via an external, Ethernet-attached cable or DSL modem would offer this service.

The service is OPTIONAL (for an *InternetGatewayDevice* that has an Ethernet WAN interface) and is specified in

urn:schemas-upnp-org:device:WANConnectionDevice

one or more instances of which are specified under the device

urn:schemas-upnp-org:device:WANDevice

An instance of *WANDevice* is specified under the root device

urn:schemas-upnp-org:device:InternetGatewayDevice

NOTE: A *WANDevice* also provides a *WANCommonInterfaceConfig* service that encapsulates Internet access properties common across all WAN interfaces.

1.1. Change Log

Changes from *WANEthernetLinkConfig:0.1*

- Removed white spaces from XML section
- Renamed LinkStatus to EthernetLinkStatus

Changes from *WANEthernetLinkConfig:0.11*

- Modified names of formal parameters of actions to be different from 'Related State Variable'.

Changes from *WANEthernetLinkConfig:0.12*

- Updated to service template v1.01
- Verified against TDC checklist v1.01
- Changed service from Required to Optional

Changes from *WANEthernetLinkConfig:0.8*

- Removed default values and updated XML section accordingly
- Required versus Optional changes to allowedValueList tables

Changes from *WANEthernetLinkConfig:0.81*

- Added XML comment tags to comments text in XML template

Changes from *WANEthernetLinkConfig:0.82*

- Updated tests section

Changes from *WANEthernetLinkConfig:0.9*

- Version changes for 1.0

Changes from *WANEthernetLinkConfig:0.99*

- Version updated to reflect 45-day review completion. No other changes to this draft.

Changes from *WANEthernetLinkConfig:0.99*

- Copyright messages and document status updated.

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:[WANEthernetLinkConfig: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
EthernetLinkStatus	R	string	See table 1.1	Not specified	N/A
<i>Non-standard state variables implemented by an UPnP vendor go here.</i>	<i>X</i>	<i>TBD</i>	<i>TBD</i>	<i>TBD</i>	<i>TBD</i>

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.

Table 1.1: allowedValueList for EthernetLinkStatus

Value	Req. or Opt. ³
<i>Up</i>	<i><u>R</u></i>
<i>Down</i>	<i><u>R</u></i>
<i>Unavailable</i>	<i><u>O</u></i>

³

2.2.1. EthernetLinkStatus

This variable indicates the status of the WAN Ethernet link. This only indicates the status of the physical link between the *InternetGatewayDevice* and an externally attached modem, and NOT the status of the external link of the modem itself. It is a **Read-only** variable.

2.2.2. Relationships Between State Variables

None.

2.3. Eventing and Moderation

Table 2: Event Moderation

Variable Name	Evented	Moderated Event	Max Event Rate ¹	Logical Combination	Min Delta per Event ²
EthernetLinkStatus	Yes	No	N/A	N/A	N/A
<i>Non-standard state variables implemented by an UPnP vendor go here.</i>	<i>TBD</i>	<i>TBD</i>	<i>TBD</i>	<i>TBD</i>	<i>TBD</i>

¹ Determined by N, where Rate = (Event)/(N secs).

² (N) * (allowedValueRange Step).

2.3.1. Event Model

If `EthernetLinkStatus` changes, subscribed control points are notified. A status change indicates presence or absence of connectivity to an externally attached modem.

2.4. Actions

Immediately following this table is detailed information about these actions, including short descriptions of the actions, the effects of the actions on state variables, and error codes defined by the actions.

Table 3: Actions

Name	Req. or Opt. ¹
GetEthernetLinkStatus	<u>R</u>
<i>Non-standard actions implemented by an UPnP vendor go here.</i>	X

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

2.4.1. GetEthernetLinkStatus

This action retrieves the link status of the Ethernet connection to an externally attached modem.

2.4.1.1. Arguments

Table 4: Arguments for GetEthernetLinkStatus

Argument	Direction	relatedStateVariable
NewEthernetLinkStatus	<i>OUT</i>	EthernetLinkStatus

2.4.1.2. Dependency on State (if any)

2.4.1.3. Effect on State (if any)

None.

2.4.1.4. Errors

errorCode	errorDescription	Description
402	Invalid Args	One of following: not enough IN arguments, too many IN arguments, no IN argument by that name, one or more IN arguments are of the wrong data type. See also the UPnP Device Architecture.
501	Action Failed	May be returned in current state if service prevents invoking of that action.

2.4.2. Non-Standard Actions Implemented by a UPnP Vendor

To facilitate certification, non-standard actions implemented by UPnP vendors should be included in this service template. The UPnP Device Architecture lists naming requirements for non-standard actions (see the section on Description).

2.4.3. Relationships Between Actions

None.

2.4.4. Common Error Codes

The following table lists error codes common to actions for this service type. If an action results in multiple errors, the most specific error should be returned.

Table 5: Common Error Codes

errorCode	errorDescription	Description
401	Invalid Action	See UPnP Device Architecture section on Control.
402	Invalid Args	See UPnP Device Architecture section on Control.
404	Invalid Var	See UPnP Device Architecture section on Control.
501	Action Failed	See UPnP Device Architecture section on Control.
600-699	TBD	Common action errors. Defined by UPnP Forum Technical Committee.
701-799		Common action errors defined by the UPnP Forum working committees.
800-899	<i>TBD</i>	<i>(Specified by UPnP vendor.)</i>

2.5. Theory of Operation

As mentioned earlier, this service is implemented if an *InternetGatewayDevice* supports an external, Ethernet-attached modem. If the modem type identification and control operations are possible through other proprietary mechanisms, a vendor may choose to implement a more specific link configuration service; for example *WANDSLLinkConfig* or *WANCableLinkConfig*.

3. XML Service Description

```

<?xml version="1.0"?>
<scpd xmlns="urn:schemas-upnp-org:service-1-0">
  <specVersion>
    <major>1</major>
    <minor>0</minor>
  </specVersion>
  <actionList>
    <action>
      <name>GetEthernetLinkStatus</name>
      <argumentList>
        <argument>
          <name>NewEthernetLinkStatus</name>
          <direction>out</direction>
          <relatedStateVariable>EthernetLinkStatus</relatedStateVariable>
        </argument>
      </argumentList>
    </action>
    <!-- Declarations for other actions added by UPnP vendor (if any) go
here -->
  </actionList>
  <serviceStateTable>
    <stateVariable sendEvents="yes">
      <name>EthernetLinkStatus</name>
      <dataType>string</dataType>
      <allowedValueList>
        <allowedValue>Up</allowedValue>
        <allowedValue>Down</allowedValue>
        <allowedValue>Unavailable</allowedValue>
      </allowedValueList>
    </stateVariable>
    <!-- Declarations for other state variables added by UPnP vendor (if
any) go here -->
  </serviceStateTable>
</scpd>

```

4. Test

No semantic tests have been defined for this service.

Change History**Change Log for Version 1.0 (10-4-00)**

- Revised the Title Page to call out V1.0 of the Service Template
- Changed to be consistent with Sample Designs released to the Technical Committee
- Service State Table: Variable Descriptions removed from the table and are listed in specific sections following the table.
- Actions: Reformatted the information contained in the Action Table:
 - Added overview entry point.
 - Added an Action Summary Table to specify Required or Optional
 - Added enumerated sections to specify each actions: Arguments, Effect on State, and Errors.