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INTERNATIONAL STANDARD

Information technology – UPnP Device Architecture – Part 2: Basic Device Control Protocol – Basic Device



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IEC Central Office
3, rue de Varembé
CH-1211 Geneva 20
Switzerland
Email: inmail@iec.ch
Web: www.iec.ch

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INFORMATION TECHNOLOGY – UPNP DEVICE ARCHITECTURE –

Part 2: Basic Device Control Protocol – Basic Device

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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.

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ORIGINAL UPNP DOCUMENTS
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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
UPnP ScheduledRecording:1	ISO/IEC 29341-4-14
UPnP DigitalSecurityCamera:1 Device	ISO/IEC 29341-5-1
UPnP DigitalSecurityCameraMotionImage:1 Service	ISO/IEC 29341-5-10
UPnP DigitalSecurityCameraSettings:1 Service	ISO/IEC 29341-5-11
UPnP DigitalSecurityCameraStillImage:1 Service	ISO/IEC 29341-5-12
UPnP HVAC_System:1 Device	ISO/IEC 29341-6-1
UPnP HVAC_ZoneThermostat:1 Device	ISO/IEC 29341-6-2
UPnP ControlValve:1 Service	ISO/IEC 29341-6-10
UPnP HVAC_FanOperatingMode:1 Service	ISO/IEC 29341-6-11
UPnP FanSpeed:1 Service	ISO/IEC 29341-6-12
UPnP HouseStatus:1 Service	ISO/IEC 29341-6-13
UPnP HVAC_SetpointSchedule:1 Service	ISO/IEC 29341-6-14
UPnP TemperatureSensor:1 Service	ISO/IEC 29341-6-15
UPnP TemperatureSetpoint:1 Service	ISO/IEC 29341-6-16
UPnP HVAC_UserOperatingMode:1 Service	ISO/IEC 29341-6-17
UPnP BinaryLight:1 Device	ISO/IEC 29341-7-1
UPnP DimmableLight:1 Device	ISO/IEC 29341-7-2
UPnP Dimming:1 Service	ISO/IEC 29341-7-10
UPnP SwitchPower:1 Service	ISO/IEC 29341-7-11
UPnP InternetGatewayDevice:1 Device	ISO/IEC 29341-8-1
UPnP LANDevice:1 Device	ISO/IEC 29341-8-2
UPnP WANDevice:1 Device	ISO/IEC 29341-8-3
UPnP WANConnectionDevice:1 Device	ISO/IEC 29341-8-4
UPnP WLANAccessPointDevice:1 Device	ISO/IEC 29341-8-5
UPnP LANHostConfigManagement:1 Service	ISO/IEC 29341-8-10
UPnP Layer3Forwarding:1 Service	ISO/IEC 29341-8-11
UPnP LinkAuthentication:1 Service	ISO/IEC 29341-8-12
UPnP RadiusClient:1 Service	ISO/IEC 29341-8-13
UPnP WANCableLinkConfig:1 Service	ISO/IEC 29341-8-14
UPnP WANCommonInterfaceConfig:1 Service	ISO/IEC 29341-8-15
UPnP WANDSLLinkConfig:1 Service	ISO/IEC 29341-8-16
UPnP WANEthernetLinkConfig:1 Service	ISO/IEC 29341-8-17
UPnP WANIPConnection:1 Service	ISO/IEC 29341-8-18
UPnP WANPOTSLinkConfig:1 Service	ISO/IEC 29341-8-19
UPnP WANPPPConnection:1 Service	ISO/IEC 29341-8-20
UPnP WLANConfiguration:1 Service	ISO/IEC 29341-8-21
UPnP Printer:1 Device	ISO/IEC 29341-9-1
UPnP Scanner:1.0 Device	ISO/IEC 29341-9-2
UPnP ExternalActivity:1 Service	ISO/IEC 29341-9-10
UPnP Feeder:1.0 Service	ISO/IEC 29341-9-11
UPnP PrintBasic:1 Service	ISO/IEC 29341-9-12
UPnP Scan:1 Service	ISO/IEC 29341-9-13
UPnP QoS Architecture:1.0	ISO/IEC 29341-10-1
UPnP QosDevice:1 Service	ISO/IEC 29341-10-10
UPnP QosManager:1 Service	ISO/IEC 29341-10-11
UPnP QosPolicyHolder:1 Service	ISO/IEC 29341-10-12
UPnP QoS Architecture:2	ISO/IEC 29341-11-1
UPnP QOS v2 Schema Files	ISO/IEC 29341-11-2

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UPnP Document Title	ISO/IEC 29341 Part
UPnP QosDevice:2 Service	ISO/IEC 29341-11-10
UPnP QosManager:2 Service	ISO/IEC 29341-11-11
UPnP QosPolicyHolder:2 Service	ISO/IEC 29341-11-12
UPnP RemoteUIClientDevice:1 Device	ISO/IEC 29341-12-1
UPnP RemoteUIServerDevice:1 Device	ISO/IEC 29341-12-2
UPnP RemoteUIClient:1 Service	ISO/IEC 29341-12-10
UPnP RemoteUIServer:1 Service	ISO/IEC 29341-12-11
UPnP DeviceSecurity:1 Service	ISO/IEC 29341-13-10
UPnP SecurityConsole:1 Service	ISO/IEC 29341-13-11

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1. Overview and Scope

This device template is compliant with the UPnP Device Architecture, Version 1.0.

Basic:1.0 provides a mechanism for products that wish to use UPnP, but for which there is not yet an appropriate standard base device type. The Basic Device type does not define any Services or embedded Devices, although a particular product may incorporate elements defined by other UPnP Standards and/or vendor-defined extension types.

A minimal Basic Device (one that does not add any services or embedded devices) is discoverable using UPnP discovery and may provide identifying information and a Presentation URL using the normal Device Description mechanism.

The Basic Device type also may be useful as the root device type for a product that incorporates standard elements in ways not anticipated by the standard types. For example, a television that also includes room light controls and a printer might choose to use the Basic Device type as the root type, with embedded devices and services chosen from the appropriate standard types.

> **Note:** This definition relies on an Architecture change under consideration in the UPnP Forum Technical Committee: that the definition of the 'servicelist' element be changed to include 'minoccurs="0"'; that is, that it be made an optional element.

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2. Device Definitions

Device Type

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

urn:schemas-upnp-org:device:Basic:1.0

Device Model

Products that expose devices of the type **urn:schemas-upnp-org:device:**Basic:1.0 do not require the implementation of any embedded device or service type.

Table 1: Device Requirements

DeviceType	Root	Req. or Opt.[1]	ServiceType	Req. or Opt.[1]	Service ID[2]
Basic:1.0	Root				

[1] R = Required, O = Optional, X = Non-standard.
[2] Prefixed by urn:**upnp-org**:**serviceId**: .

Theory of Operation

The Basic Device does not define any Service Actions or Evented State Variables, so there are no operations on it that Control Points would use. For a discussion of the rationale for the absence of services for the Basic Device, see Annex A.

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3. XML Device Description

```
<?xml version="1.0"?>
<root xmlns="urn:schemas-upnp-org:device-1-0">
  <specVersion>
    <major>1</major>
    <minor>0</minor>
  </specVersion>
  <URLBase>base URL for all relative URLs</URLBase>
  <device>
    <deviceType>urn:schemas-upnp-org:device:Basic:1</deviceType>
    <friendlyName>short user-friendly title</friendlyName>
    <manufacturer>manufacturer name</manufacturer>
    <manufacturerURL>URL to manufacturer site</manufacturerURL>
    <modelDescription>long user-friendly title</modelDescription>
    <modelName>model name</modelName>
    <modelNumber>model number</modelNumber>
    <modelURL>URL to model site</modelURL>
    <serialNumber>manufacturer's serial number</serialNumber>
    <UDN>uuid:UUID</UDN>
    <UPC>Universal Product Code</UPC>
    <iconList>
      <icon>
        <mimetype>image/format</mimetype>
        <width>horizontal pixels</width>
        <height>vertical pixels</height>
        <depth>color depth</depth>
        <url>URL to icon</url>
      </icon>
      XML to declare other icons, if any, go here
    </iconList>
    <presentationURL>URL for presentation</presentationURL>
  </device>
</root>
```

4. Test

A Basic Device that does not extend the type as specified in this document needs to pass only the addressing, discovery and description phases of the UPnP Certification test.

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Annex A
(informative)

Services in a Basic Device

This annex is included to explain reasons why no standard Service types are included for the Basic Device; it is not a normative part of the Basic Device specification.

The Basic Device Type does not specify any services. The UPnP Forum Technical Committee has amended the UPnP Device Architecture to make the serviceList element in the device description optional, and to permit it to be empty, so this is now permitted.

The rationale for not requiring a service in the definition of a Basic Device is this:

- A device that implements the Basic Device should have access to any Intellectual Property needed to implement UPnP.
- Use of any UPnP Forum Member Intellectual Property is governed by the UPnP Forum Member Agreement, which refers to Standard DCPs, but is mute regarding Services.
- A device that does not contain any Standard Services should not get the UPnP logo (because the meaning of the logo is that the device _does_ contain one or more Standard Services - so the consumer can reasonably expect that it will work with other devices and control points appropriate to its type). Allowing a device with no Standard Services to use the logo would dilute the value of the logo.
- Use of the logo is granted by the UPnP Implementors Corp. (UIC) Member Agreement, which requires that in order to use the UPnP logo, the device must be certified by the UIC as having at least one Standard Service.

By not requiring a Standard Service in the Basic Device, we allow a product to meet the Intellectual Property requirement without also creating a right of that product to use the logo.

Because the UPnP Device Architecture allows arbitrary services in any device type, a product using the Basic Device type may incorportate services.

There do exist Control Points which enforce the old requirement that a device contain at least one service. In order to satisfy such CPs, a product may want to add either a 'null' service that has no actions or evented state variables, or one that actually does something - standard or vendor-defined.

If a Basic Device does include a Standard Service, then it could get rights to the logo on that basis. This covers the case of a device that is not obviously of a standard type, but can be used in some standard way, such as a UPnP Birdcage (no standard device type, so it would use Basic) that has a built-in video camera so that you can check on Tweetie remotely (a standard media source service).

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PO Box 131
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