IPv6 Enabled WWW Logo Program

V2.1.2

(2019-5)

MODIFICATION RECORD

Version 2.1.2   May 1, 2019
- Add advanced level (Phase-2)

Version 2.0.2.   Sep 7, 2010
- Add the script sample and the description of a new status.

Nov 30, 2009
- Updates following v6SG first face-to-face meeting

Version 2.0.1   Sep 17, 2009
- Clarifications of the procedure

Version 2.0.0.   June 7, 2009
- Various Edits

Version 1.0.0.4   June 6, 2009
- Addition Steering Group structure

Version 1.0.0.3   June 4, 2009
- Various edits

Version 1.0.0.   June 3, 2009
- Renamed the programs as "IPv6 Enabled WWW Logo Program" and "IPv6 Enabled ISP Logo Program".

MAY 24, 2009
- Updated the process of the program.
- Modified the flow chart of IPv6 Enabled WWW Logo Program in annex A.2 to match the updated program process.

Version 0.2.0   May 4, 2009
- Added a new dynamic logo style, and modified the introduction for the logos.

May 4, 2009
- Added annex A.3 to define IPv6 WWW Enabled service status.
- Added unique series number to the image logo for each website passed the primary test.
- Added dynamic logo and image logo template in annex A.3.
- Update the name of this program's operator to be undifferentiated.

Version 0.1.0   April 22, 2009

ACKNOWLEDGMENTS

The IPv6 Forum would like to acknowledge the efforts of the following organizations in the development of this specification.

Principle Author:

BII Group

Commentators:

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INTRODUCTION

The IPv6 Forum[1] IPv6 Enabled Logo Program (http://www.ipv6enabled.org) objective is to encourage and accelerate deployment of IPv6 and the adoption of IPv6 by web site owners, application developers and online infrastructure providers. The IPv6 Forum IPv6 Ready logo[2] program clearly demonstrates the widespread (exponential growth) support of IPv6 in products. This impressive list of vendors indicates the number of potential IPv6 users ready to use IPv6 and represent a real incentive for web site owners, application developers, CDN providers to enable IPv6 and for various service providers (such as ISPs, ASPs and CSPs) to provide IPv6 enabled service for their customers.

The IPv6 Enabled Logo (v6eLogo) Program is a program intended to increase user confidence by demonstrating that IPv6 is available now and is ready to be used.

The IPv6 Enabled Logo Program consists, currently, of the following six sub-programs:

- IPv6 Enabled WWW Logo (v6eLogo_WWW) Program

- IPv6 Enabled ISP Logo (v6eLogo_ISP) Program

- IPv6 Enabled APP Logo (v6eLogo_APP) Program

- IPv6 Enabled CDN Logo (v6eLogo_CDN) Program

- IPv6 Enabled Cloud Logo(v6elogo_Cloud) Program

- IPv6 Enabled IDC Logo(v6elogo_IDC) Program

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1 IPv6 Forum web site http://www.ipv6forum.com

2 IPv6 Ready Logo http://www.ipv6ready.org

Table of Contents

1. Foreword

Changes to this specification are subject to public review and approval by the IPv6 Forum **IPv6 Enabled Logo Steering Group (v6eSG)**.

Version x.y.z

where:

x the first digit:

1 presented to v6eSG for information;

2 presented to v6eSG for approval;

3 or greater indicates v6eSG approved document under change control.

y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.

z the third digit is incremented when editorial only changes have been incorporated in the document.

2. Scope

The present document describes the IPv6 Enabled Logo Program. This document is the result of consensus between the IPv6 Enabled Steering Group (v6eSG) members and industry review

3. IPv6 Enabled Program

3.1. General

The IPv6 Forum IPv6 Enabled Logo Program[3] objective is to encourage and accelerate deployment and adoption of IPv6 by web site owners, application developers, CDN providers and various service providers.

The IPv6 Enabled Logo (v6eLogo) Program goal is to increase user confidence by demonstrating that IPv6 is available now and is ready to be used.

The IPv6 Enabled Logo Program consists, of the following sub-programs:

- IPv6 Enabled WWW Logo (v6eLogo_WWW) Program

- IPv6 Enabled ISP Logo (v6eLogo_ISP) Program

- IPv6 Enabled APP Logo (v6eLogo_APP) Program

- IPv6 Enabled CDN Logo (v6eLogo_CDN) Program

- IPv6 Enabled Cloud Logo (v6eLogo_Cloud) Program

- IPv6 Enabled IDC Logo (v6eLogo_Cloud) Program

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3 http://www.ipv6enabled.org/

The IPv6 Forum has created the **IPv6 Enabled Steering Committee (v6eSG)**, to manage the IPv6 Enabled Logo Program.
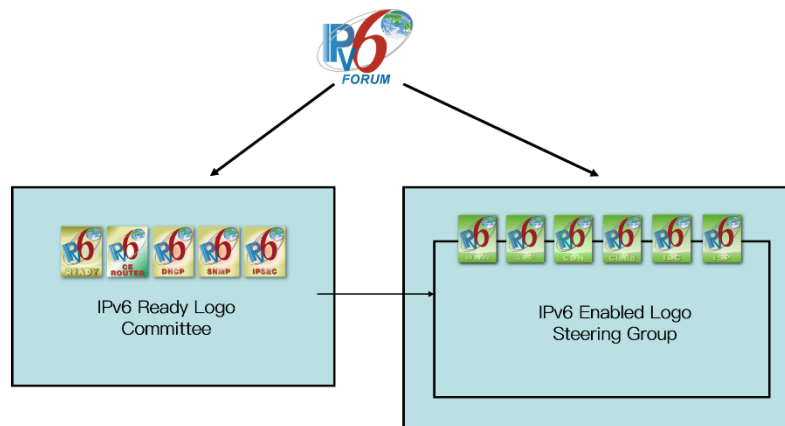
The IPv6 Enabled Steering Group mission is to help support IPv6 deployment on Web sites, Mobile applications, CDNs and by various service providers (e.g., ISPs, ASPs or CSPs).

The **IPv6 Enabled Logo Steering Group (v6eSG)** is structured as follows:

- IPv6 Forum President, Latif Ladid

- IPv6 Forum (Ready/Enabled) Logo Programs Chairperson, Yanick Pouffary @ IPv6 Forum Fellow

- IPv6 Enabled Logo Steering Group Chairperson, Liu Dong @ Chair China IPv6 Council / BII Group

- IPv6 Ready Logo Committee Chairperson, Hiroshi Esaki @ Executive Director Japan IPv6 Promotion Council (v6PC) / WIDE Project

- IPv6 Enabled Logo Legal/Operational, Cesar Viho @ IPv6 Ready Logo Operational / IPv6 Forum Fellow / IRISA

- IPv6 Enabled Logo Technical Lead IPv6 Enabled WWW logo, Huan Huan @ BII Group

    o IPv6 Enabled Logo Technical co-chairs

    o Hiroshi Miyata @ IPv6 Ready Logo Technical Lead / IPv6 Forum Fellow / TAHI Project

    o Timothy Winters @ UNH IOL

    o Antony Baire @ IRISA

- IPv6 Enabled Logo Technical Group

    o Initial members are IPv6 Ready Logo Technical group

- IPv6 Enabled Logo Administrative group

    o Initial members are IPv6 Ready Logo Administrative group

The **v6eSG** is responsible for:

- Defining procedures, regulations and steps for the v6eLogo program.

- Defining the strategy for deploying the IPv6 Enabled Logo Program

- Administering the right to use the IPv6 Enabled Logo.

Final approval of IPv6 Enabled procedures and scripts is done by the IPv6 Enabled Logo Committee Chairperson, the IPv6 Ready Logo Chairperson, the IPv6 Forum (Ready/Enabled) Logo Programs Chairperson and IPv6 Forum President.

The IPv6 Enabled Logo ID data base and the IPv6 Enabled Web pages are administered mainly by the BII Group.

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In order to maintain credibility and neutral services among vendors and users, the member that support IPv6 Enabled Logo Steering Group operates according to the IPv6 Ready Logo Program Code of Conduct http://www.ipv6ready.org/docs/v6LC_Code_of_Conduct.pdf and are tied by a signed Non Disclosure Commitment.

3.2. IPv6 Enabled WWW Logo Program

The goal of the **IPv6 Enabled WWW Logo (v6eLogo_WWW)** program is for IPv6 enabled Web sites. This program is to help support IPv6 deployment on Web sites.

Applicant's website will be validated for IPv6 reachability as defined in this document. If passed, the IPv6 Forum then authorizes usage of the IPv6 Enabled WWW Logo for that website.

The basic level (Phase-1) validates the applicant web site IPv6 reachability. For *basic level (Phase-1)* validation, an automatic script will be run by the v6eSG. If the script is run successfully the applicant web site is assigned a logo ID and is listed on the IPv6 Enabled web page.

Note: The applicant's web site may not be able have IPv6 reachability from the testing server(s) run by the v6eSG, not because of technical problem at the applicant's web site, but because of technical problem at some intermediate node/network between the applicant's web site and the testing server(s) run by the v6eSG. When the v6eSG observed the un-reachability at the applicant's web server, an attempt will be made to identify the reachability issue.

For *advanced level* (Phase-2) validation, obtaining the basic level logo is prerequisite. The advanced level (Phase-2) requires all pages and contents of the website to support IPv6，that is，the internet user can access the whole website via ipv6-only network.

3.3. IPv6 Enabled ISP Logo Program

IPv6 Enabled ISP Logo (v6eLogo_ISP) program is for IPv6 enabled Internet Service providers.

Information about this program can be found at:

http://www.ipv6enabled.org/ipv6_enabled/specification/isp.pdf

3.4. IPv6 Enabled APP Logo Program

IPv6 Enabled APP Logo (v6eLogo_APP) program is for IPv6 enabled Mobile applications.
Information about this program can be found at:
http://www.ipv6enabled.org/ipv6_enabled/specification/app.pdf

3.5. IPv6 Enabled CDN Logo Program

IPv6 Enabled CDN Logo (v6eLogo_CDN) program is for IPv6 enabled Content Delivery Network.

Information about this program can be found at:

http://www.ipv6enabled.org/ipv6_enabled/specification/cdn2.pdf

3.6. IPv6 Enabled Cloud Logo Program

IPv6 Enabled Cloud Logo (v6eLogo_Cloud) program is for IPv6 enabled Cloud services.

This program is currently under development and will be released later.

3.7. IPv6 Enabled IDC Logo Program

IPv6 Enabled IDC Logo (v6eLogo_IDC) program is for IPv6 enabled Internet Data Center.

This program is currently under development and will be released later.

4. IPv6 Enabled WWW Logo Program

4.1. General

WWW is one of the most widely used applications of internet at present. IPv6 enabled websites have already appeared. The **v6eLogo_WWW** program objective is to encourage adoption of IPv6 in helping web site owners to test and check their proper IPv6 enablement.

4.2. Definition - Requirements of IPv6 enabled website

The followings are the technical requirements, which an IPv6 enabled web site must satisfied to obtain the logo.

Basic Level:

(1) IPv6 Resolving Ability

An IPv6 enabled website must have (a) global IP address, and (2) AAAA resource record in global domain name system (DNS).

[Note] The Domain Name System (DNS) provides an essential service on the Internet, mapping structured names to a variety of data, typically IP addresses. The Domain Name System to support hosts running IP version 6 (IPv6) has been defined in RFC3596. AAAA resource record is defined to translate a domain name to an IPv6 address. An AAAA query for a specified domain name in the Internet class returns all associated AAAA resource records in the answer section of a response.

(2) IPv6 HTTP Access Ability

An IPv6 enabled website must be able to provide IPv6 access for visitors to the site, via http protocol.

Advanced Level:

(1) IPv6 Content Access Ability

(2) Performance

(3) Stability

(4) IPv4 and IPv6 comparison testing

(5) Security

4.3. Definition - Specification of Checking/Validating IPv6 WWW Site Connectivity

The following technical specification defines how the v6eSG checks to validate the applied IPv6 enabled website, according to the reception of application from the applicant.

4.3.1. IPv6 DNS Resolving Ability

The scrip implemented in the checking/validating server(s) at the v6eSG will perform the following task, to validate Ipv6 DNS resolving ability:

- Try to resolve the domain name through 5 different DNS server, and each server for 5 times. If the DNS resolving result contains AAAA record, this resolving is counted as success. The success rate of getting the resolving result with AAAA record is formulated as followed:

  DNS SR = x/25 *100% (1)

  DNS SR in formulation (1) is short for *DNS resolving successful rate*.

  The parameter x indicates how many times the IPv6 DNS resolved successfully, and "25" is the total time of the DNS resolving test.

DNS SR is first requirement for obtaining IPv6 Enabled WWW Logo.

4.3.2. IPv6 HTTP Access Ability

The scrip implemented in the checking/validating server(s) at the v6eSG will perform the following task to validate IPv6 HTTP access ability:

- Send HTTP request to the website for 5 times, and record times of successful response. The successful rate of HTTP accessing is formulated as followed:

  HTTP SR = y/5*100%   (2)

  HTTP SR in formulation (2) is short for *HTTP accessing successful rate*.

  The parameter y in formulation (2) indicates times of successful HTTP accessing.

HTTP SR is second requirement for obtaining IPv6 Enabled WWW Logo.

4.3.3. Optional - IPv6 WWW Maintenance Ability tests

Optionally the following statistics are maintained automatically for v6eLogo_WWW website recipients.

- **Daily Reach** (DR) statistic is defined as the count of different unique IPv6 visitors' addresses every day.

  Note: Each unique IPv6 address count as one, regardless of how many times that address attempted to reach the website that day.

- **Weekly Reach** (WR) is defined as the count of different unique IPv6 visitors' addresses every week.

Please note that v6eLogo_WWW website recipient can opt-out to not have the maintenance tested run.

4.3.4. Required quality of IPv6 enabled website for validation

4.3.4.1. Primary Test

Two primary test cases have been designed for the validation of the (1) IPv6 DNS resolving ability and the (2) IPv6 HTTP ability for a website.

The applied website should meet the requirements listed in the table below. The DNS SR should be above 60%, and HTTP SR should be above 20%.

Table Requirements for primary test

DNS SR	>=60%
HTTP SR	>=20%

4.3.4.2. Optional - Maintenance Test

If v6eLogo_WWW website recipient opt to have the maintenance tested be run.

To check the maintenance ability of a v6eLogo_WWW website, the maintenance test will be automatically run by v6eSG.

The maintenance ability should meet the requirements listed in the table below. The DNS SR should be above 60%, and HTTP SR should be above 20% minimum 4 days each week.

Table Requirements for maintenance test

| Condition	Value
DNS SR >=60%	>=4 days/week
HTTP SR>=20%	>=4 days/week

4.4. Procedure to obtain the v6eLogo_WWW

The process for obtaining the **IPv6 Enabled WWW Logo Basic level** is as following:

1. Download the IPv6 Enabled WWW validation specifications from the IPv6 Enabled Logo web site. http://www.ipv6enabled.org

2. Fill out the Application form online and complete the IPv6 Enabled Logo Usage Agreement. Press the "apply button" to show your intention of agreement. The URL you put in the application form is limited to the hostname of your web server.

3. Once the web site owner's application is validated by the v6eSG, the primary test, as defined in 4.3.4.1, will begin.

   - Primary test cases check the (1) IPv6 DNS resolving ability and the (2) IPv6 HTTP ability for the website.

4. 30 minutes later, if the two primary test cases are passed, the web site owner receive a Dynamic logo, as defined in 4.6, with a script to be inserted in the web site source file.

   - The ability to insert this script in the web site source code validates the ownership of the web site by the applicant.

   - The script checks the validity and IPv6 reachability of the web site.

     The dynamic logo script records access time of each IPv6 visitor to the web site,. No confidential data is kept.

5. Once the script is run successfully once the web site owner will receive a Image Logo with a unique serial number, as defined in 4.5. And the web site will be listed on the IPv6 Enabled WWW Web Sites list.

   - Public information such as the web site's URL, logo ID, tags and approved time of the site's IPv6 visitor will be shown.

6. Optional-Maintenance test, as defined in 4.3.4.2, is executed periodically to check persistence of the IPv6 service of a v6eLogo_WWW website.

   - Important – If the web site owner does not want to allow Maintenance test to be run the dynamic logo can now be removed. Note however that the web site status will be IPv6 Enabled.

   · To pass the maintenance test, the DNS SR should be above 60%, and HTTP SR should be above 20% minimum 4 days each week

- If v6eLogo_WWW website cannot meet the maintenance test for a period of continuous 6 weeks the web site will be logged as Service-out on the IPv6 Forum IPv6 Enabled certification web page.

  Please note: The Service-out status can be due to problems on the v6eLogo_WWW web site or due to technical problem at some intermediate node/network between the v6eLogo_WWW and the testing server(s) run by the v6eSG.

```
                    ┌──────────────┐ ◄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┐
                    │   Apply (1)  │                ┆
                    └──────┬───────┘                ┆
                           │              Retry     ┆
                           │                        ┆
                           ▼            Fail   ┌─────────────────────┐
                        ◇─────────◇───────────►│  Get error message  │
                        Info check (2)         └─────────────────────┘
                        ◇─────────◇
                           │
                         Pass        Retry
                           │       ┌┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┐
                           ▼       ▼               ┆
                        ◇─────────────◇       ┌──────────────────┐
                        Primary test (3) ────►│  Get test result │
                        ◇─────────────◇  Fail └──────────────────┘
                           │
                         Pass
                           ▼
                    ┌───────────────────────┐
                    │ Get image logo Collect│
                    │    test result (4)    │
                    └───────────┬───────────┘
                                │
                                ▼
        ┌──────────────────────────────┐          ┌─────────────────────┐
        │   Status Service-In (5)      │          │  Status Service-Out │
        └───────────┬──────────────────┘          └──────────┬──────────┘
                    │                                         ▲
                    ▼                                       Y │
              ◇─────────────◇    Fail      ◇──────────────◇
              Maintenance test (6)────────►│  Weeks < 6   │
              ◇─────────────◇             ◇──────────────◇
    Pass   │    │                                    │ N
           │    Cancel                               ▼
           │    │                        ┌─────────────────────┐
           │    ▼                        │  Status Service-Out │
           │ ┌───────────────────┐       └─────────────────────┘
           │ │ Status IPv6 Enabled│
             └───────────────────┘
```
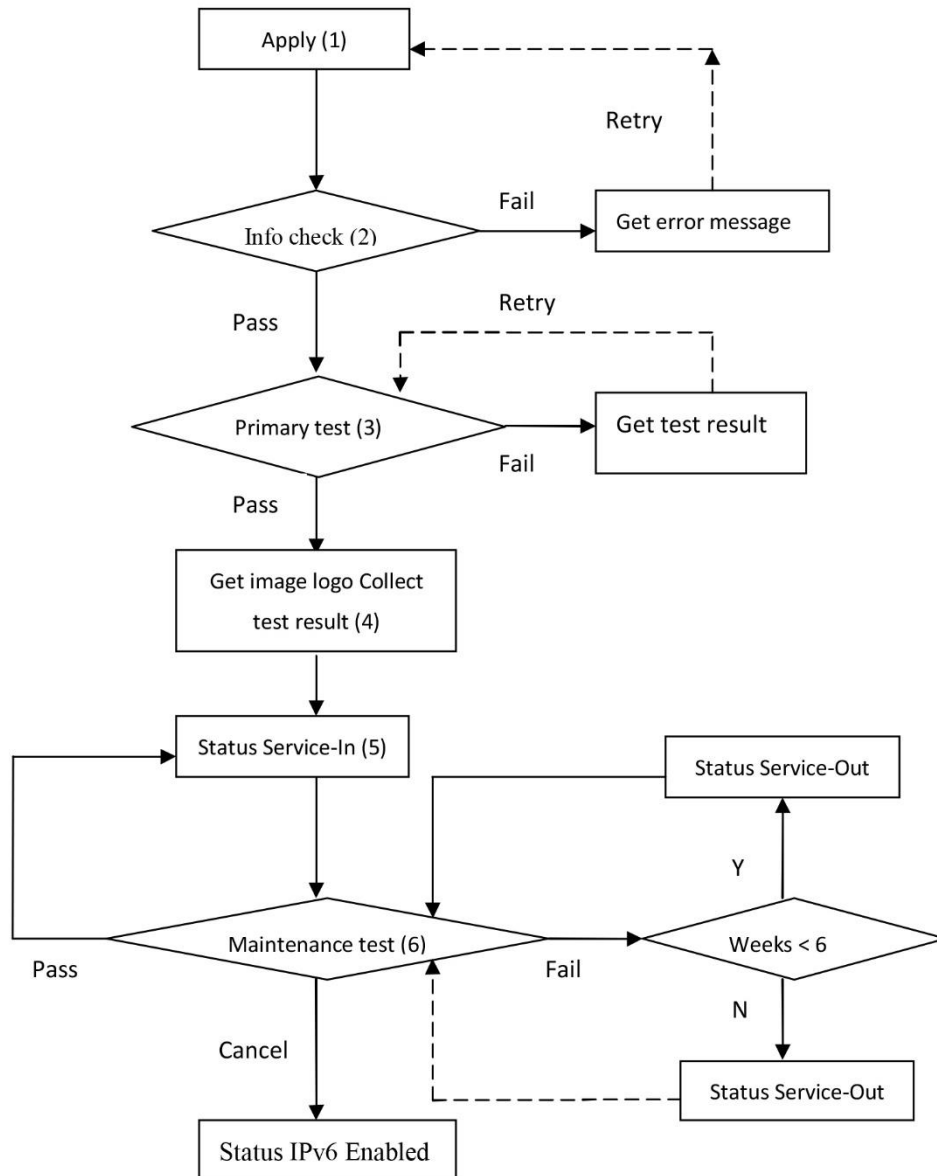
The process for obtaining the **IPv6 Enabled WWW Logo Advanced level** is as following:

1. Download the IPv6 Enabled WWW validation specifications from the IPv6 Enabled Logo web site. http://www.ipv6enabled.org

2. Fill out the Application form online and complete the IPv6 Enabled Logo Usage Agreement. Press the "apply button" to show your intention of agreement. The URL you put in the application form is limited to the hostname of your web server.

3. Once the application is submitted, the v6eSg will contact you to confirm the information and execute test.

4. Once the web site passes the test, the v6eSG will send a phase-2 logo to applicant email. And the web site will be listed on the IPv6 Enabled WWW Phase-2 Web Sites list
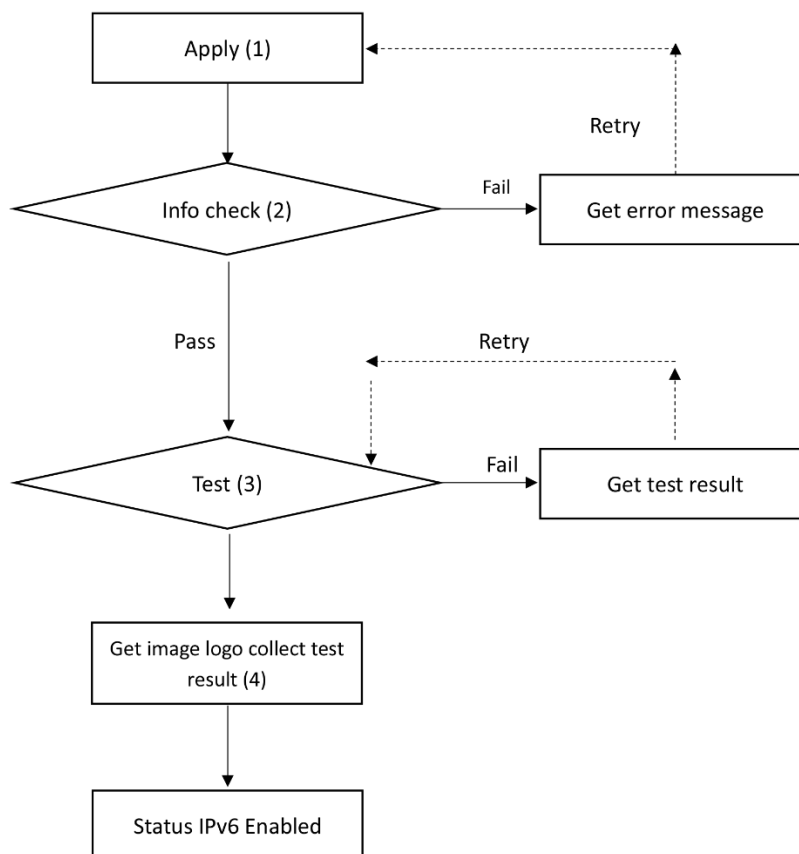
4.5 Logo

4.5.1 Basic Level (Phase-1)

4.5.1.1 Image logo

Figure: Image logo

Image logo is authorized to applicant when the web site has passed the primary test.

The series number XX-YY-ZZZZZZZZ is unique.

XX indicates the certification level, YY marks the region or country, and ZZZZZZZZ is an id number beginning from 00000001.

Dynamic logo

When the applicant successfully passes the primary test as defined in 4.3.4.1 the v6eSG generates the corresponding Dynamic logo with a tiny embedded java script.

The Dynamic logo is registered to the applicant's URL and cannot be used to obtain v6eLogo_WWW for any other web site.

The script works as followed:

The script first checks its validity by searching the logo ID of this script in the IPv6 Enabled Program's database, and then validates the URL of this page matches this ID.

If a match is found, the script records DNS SR and HTTP SR. No confidential data is recorded.

Sample of the script:

```
<div id=ipv6_enabled_www_test_logo></div>
<script language="JavaScript" type="text/javascript">
    var Ipv6_Js_Server = (("https:" == document.location.protocol) ? "https://" :
"http://");
    document.write(unescape("%3Cscript src='" + Ipv6_Js_Server +
"www.ipv6forum.com/ipv6_enabled/sa/SA1.php?id=0'
type='text/javascript'%3E%3C/script%3E"));
</script>
</div>
```

There are two styles of dynamic logo for applicant to choose from: classic style and mini style.

Figure: v6eLogo Classic style (Basic level)

Figure: v6eLogo Mini style (Basic level)

The status shown in the dynamic logo is as follows:

1) Testing: Primary test for IPv6 accessing is in progress.

2) Service-in: Primary test is successful and last-week maintenance test is successful or in progress.

3) Service-out: Primary test is successful and last-week maintenance test is failed.

    Please note: The Service-out status can be due to problems on the v6eLogo_WWW web site or due to technical problem at some intermediate node/network between the v6eLogo_WWW and the testing server(s) run by the v6eSG.

4) IPv6 Enabled: The script has been disabled. Maintenance test cannot be run due to web site owner policy after the website has already passed the entire test and got the IPv6 Enabled WWW logo.

Note: If nothing happens after you add the script in your website, please check whether the current URL matches the validated v66eLogo_WWW URL.

Note: Only after the first IPv6 web user browses this page the dynamic logo will display the status "Service-in" for v6eLogo Classic style or "IPv6-On" v6eLogo Mini style

4.5.2 Advanced Level (Phase-2)
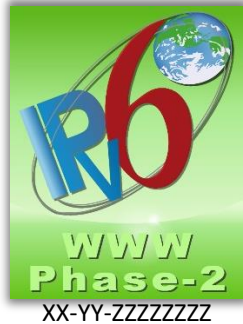
4.5.2.1 Image logo

XX-YY-ZZZZZZZZZ

Image logo is authorized to applicant when the web site has passed the Advanced level (Phase-2)

The series number XX-YY-ZZZZZZZZZ is unique.

XX indicates the certification level, YY marks the region or country, and ZZZZZZZZZ is an id number beginning from 00000001.

To distinguish the different levels, v6eSG designed a new logo which is completely different from the basic level, and it also has two styles for the applicant to choose. Applicant can put it on your site to prove that your site is enabled with IPv6.

Figure: v6eLogo Classic style (Advanced level)

Figure: v6eLogo Mini style (Advanced level)

Note: The v6eSG will send logo to applicant via email when the website successfully passes the advanced level (Phase-2)

5. Terminology

IPv6 Forum: The IPv6 Forum a world-wide consortium, with a key focus to provide technical guidance for the deployment of IPv6, launched a single world-wide IPv6 Ready Logo Program (conformance and interoperability testing).

- **IPv6 Ready Logo Program:** The IPv6 Forum IPv6 Ready Logo Program provides conformance and interoperability test specifications based on open standards to support IPv6 deployment across the globe.

- **IPv6 Ready Logo Committee (v6LC):** To manage the IPv6 Ready Logo Program.

- **IPv6 Ready Logo Regional Officer:** To authorize third parties passing successfully the IPv6 tests to use the IPv6 Ready Logo

- **IPv6 Enabled Logo Program:** The IPv6 Forum IPv6 Enabled Logo Program objective is to encourage and accelerate deployment and adoption of IPv6 by web site owners and service providers.

- **IPv6 Enabled WWW Logo (v6eLogo_WWW) Program:** Sub-program of IPv6 Enabled Logo program and is applicable to web sites

- **IPv6 Enabled ISP Logo (v6eLogo_ISP) Program**: Sub-program of IPv6 Enabled Logo program and is applicable to service providers

- I**Pv6 Enabled Steering Committee (v6eSG)**: To manage the IPv6 Enabled Logo Program.

- **IPv6 enabled websites:** web sites that are accessible via IPv6

- **v6eLogo_WWW**: IPv6 Enabled WWW Logo

- **v6eLogo_ISP:** IPv6 Enabled ISP Logo

- **v6eLogo_APP:** IPv6 Enabled APP Logo

- **v6eLogo_CDN:** IPv6 Enabled CDN Logo

- **v6eLogo_IDC:** IPv6 Enabled IDC Logo

- **v6eLogo_Cloud:** IPv6 Enabled Cloud Logo

- **IDC:** Internet data center

- **APP:** application

- **CDN:** Content Delivery Network

- **WWW**: World Wide Web

- **ISP**: Internet Service Provider

- **DNS:** Domain Name System

- **DNS SR**: DNS resolving successful rate

- **HTTP:** Hypertext Transfer Protocol

- **HTTP SR**: HTTP accessing successful rate

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The IPv6 Forum

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