IEEE P802.11
Wireless LANs

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| CID 6117, 6150, 6151, 6153, 6543, 6562 |
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|  |  |  |  |  |

Abstract

***Instruct the editor to modify this section as indicated: [14/0413r0]***

* FILS IP Address Assignment element

The FILS IP Address Assignment element is used by a STA to request or to assign an IP address using FILS IP Address Configuration (10.45.3.2 (FILS IP address configuration)). If dot11FILSActivated is true, FILS IP Address Assignment element may be sent in an Association Request, an Association Response, a Reassociation Request, a Reassociation Response or a FILS Container Action frame. The format of the FILS IP Address Assignment element is shown in Figure 8-574p (FILS IP Address Assignment element format).

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| --- | --- | --- | --- |
|  | Element ID | Length | IP Address Data |
| Octets: | 1 | 1 | Variable |
| Figure 8-574p FILS IP Address Assignment element format |

The Element ID and Length fields are defined in  8.4.2.1 (General). [CID 4570]

The value of the IP Address Data field in Association/Reassociation Request frame and FILS Container Action frame from a non-AP STA to an AP is described in  8.4.2.181.1 (IP Address Data field for request). The value of the IP Address Data field in Association/Reassociation Response and FILS Container Action frame from an AP to a non-AP STA is described in  8.4.2.181.2 (IP Address Data Field for response). [14/0840r3]

***Instruct the editor to modify this section as indicated:***

* IP Address Data field for request

The format of the IP Address Data field for request is shown in Figure 8-574q (IP Address Data field for request format).

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| --- | --- | --- | --- |
| [14/0768r1] | IP Address Request Control | Requested IPv4 Address (optional)  | Requested IPv6 Address (optional) |
| Octets: | 1 | 0 or 4 | 1. or 16
 |
| Figure 8-574q— IP Address Data field for request format |

 [CIDs 4051, 4573, 4360]

The format of the IP Address Request Control field is shown in Figure 8-574r (IP Address Request Control field format).

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|  |  |  |  |  |  |  |
| [CID6150] |
|  | B0 | B1 | B2 | B3 | B4 | B5 B7 |
|  | IPv4  | IPv6  | DNS Server Address Request | Reserved |
| Bits: | 2 | 2 | 1 | 3 |
| Figure 8-574r IP Address Request Control field format[13/1417r1, CIDs 2095, 3060][CID6150] |

 [deleted per 14/0768r1 and replaced by the follwing text and tables]The IPv4 fields are set as shown in Table 8-257g— (IPv4 field settings). The IPv6 fields are set as shown in Table 8-257h— (IPv6 field settings).

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| [CID6150] |
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| --- |
| [CID6150] |
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| Table 8-257e—IPv4 field settings[CID6150] |
| IPv4 field |  Explanation |
| IPv4 Request (B0) | IPv4 Request Type (B1) |
| 0 | 0 | Reserved |
| 0 | 1 | Reserved |
| 1 | 0 | STA is requesting a new IPv4 address |
| 1 | 1 | STA is requesting the IPv4 address present in the element |

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| Table 8-257f—IPv6 field settings[CID6150] |
| IPv6 field | Explanation |
| IPv6 Request (B2) | IPv6 Request Type (B3) |
| 0 | 0 | Reserved |
| 0 | 1 | Reserved |
| 1 | 0 | STA is requesting a new IPv6 address |
| 1 | 1 | STA is requesting the IPv6 address present in the element |

 The value of the DNS Server Address Request subfield is 1 if the STA is requesting DNS server(s) address(es). [CID6536] The type of the requested DNS Server Address subfield corresponds to the type of the IP address requested. If both IPv4 and IPv6 are requested, then DNS server addresses for both types are also requested by setting this bit to 1.

[CID6151]The Requested IPv4 Address field (4 octets) carries a specific IPv4 address that the non-AP STA is requesting, when the when the IPv4 field indicates the STA is requesting a specific IPv4 address. [deleted per 14/0768r1]

[CID6151]The Requested IPv6 Address (16 octets) field carries a specific IPv6 address that the non-AP STA is requesting, when the when the IPv4 field indicates the STA is requesting a specific IPv4 address.

***Instruct the editor to modify this section as indicated: [14/0413r0]***

* IP Address Data Field for response

The format of the IP Address Data field for response is shown in Figure 8-574s (IP Address Data field format for response).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | IP Address Response Control | DNS Info Control | Assigned IPv4 Address(optional) | Subnet Mask(optional) | IPv4 Gateway Address(optional) |
| Octets: | 1 | 1 | 4 | 4  | 4 |
|  |  |  |  |  |  |
|  | IPv4 Gateway MAC Address(optional) | Assigned IPv6 Address(optional) | IPv6 Prefix Length(optional) | IPv6 Gateway Address (optional) |
| Octets: | 6 | 16 | 1 | 16 |
|  |  |  |  |  |  |
|  | IPv6 Gateway MAC Address(optional) | Lifetime of the Assigned IPv4 Address(optional)  | Lifetime of the Assigned IPv6 Address(optional)  | DNS server IPv4 address(optional) |
| Octets: | 6 | 16 | 1 | 4 |
|  |  |  |  |  |  |
|  | DNS server IPv6 address(optional) | IPv4 DNS server MAC address(optional) | IPv6 DNS server MAC address(optional) |
| Octets: | 16 | 6 | 6 |
| Figure 8-574s—IP Address Data field format for response [CID 4926]  |

[CID6543]The IP Address Response Control field’s (8 bits) subfields are interpreted as defined in Table 8-257i (IP Address Response Control field with B0 = 0) and Table 8-257j (IP Address Response Control Field with B0 = 1).

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| Table 8-257g—IP Address Response Control field with B0 = 0 |
| Bit Field | Value | Sub field | Explanation |
| B0 | 0 | IP Address Pending | An AP sets IP address assignment pending subfield to 0 if an IP address is included in the frame.B1 to B6 are set as shown below in this table when B0 = 0.  |
| B1 | 0 or 1 | IPv4 Assigned | An AP sets IPv4 Assigned subfield to 1 if Assigned. |
| B2 | 0 or 1 | IPv4 Gateway Included | An AP sets IPv4 Gateway subfield to 1 if IPv4 Gateway address and IPv4 Gateway MAC address are included in the element and sets it to 0 otherwise. |
| B3 | 0 or 1 | IPv6 Assigned | An AP sets IPv6 Assigned subfield to 1 if Assigned IPv6 address and Prefix Length are included in the element and sets it to 0 otherwise. |
| B4 | 0 or 1 | IPv6 Gateway Included | An AP sets IPv6 Gateway subfield to 1 if IPv6 Gateway address and IPv6 Gateway MAC address are included in the element and sets it to 0 otherwise. |
| B5 | 0 or 1 | Lifetime of the Assigned IPv4 Address included  | An AP sets Lifetime of the Assigned IPv4 Address included subfield to 1 if IPv4 Assigned subfield is 1 and the Time to Live for IPv4 is included in the element. If this field is 0, and if IPv4 Assigned is 1, then the IPv4 is assumed to be valid during the entire time of Association with the AP. |
| B6 | 0 or 1 | Lifetime of the Assigned IPv6 Address included  | An AP sets Lifetime of the Assigned IPv6 Address included subfield to 1 if IPv6 Assigned subfield is 1 and the Time to Live for IPv6 is included in the element. If this field is 0, and if IPv6 Assigned is 1, then the IPv6 is assumed to be valid during the entire time of Association with the AP. |
| B7 | 0 or 1 | Reserved |  |

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| Table 8-257h—IP Address Response Control Field with B0 = 1 |
| Bit Field | Value | Sub field | Explanation |
| B0 | 1 | IP Address Pending | An AP sets IP address assignment pending subfield to 1 if an IP address is not included in the frame. B1 to B6 are set as shown below in this table when B0 = 1. |
| B1 - B6 | Variable | IP address request timeout | IP address request timeout value is the maximum estimated time in the unit of seconds within which the AP may assign an IP address to the requesting STA. |
| B7 |  | Reserved |  |

 [14/0768r1]

[CID6543][CIDs 4462, 4578, 4580, 4212]

The format of the DNS Info Control field is shown in Figure 8-574t (DNS Info Control field format).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | B0 | B1 | B2 | B3 | B4 B7 |
|  | DNS Server IPv4 Address Present | DNS Server IPv6 Address Present |  IPv4 DNS Server MAC Address Present | IPv6 DNS Server MAC Address Present | Reserved |
| Bits: | 1 | 1 | 1 | 1 | 4 |
| Figure 8-574t—DNS Info Control field format [13/1417r1, CIDs 2095, 3060] |

 [CID6562]

An AP sets the DNS Server IPv4 address Present bit to 1 if the IPv4 DNS server IPv4 address is present in the element and sets it to 0 otherwise. This field is set to 0 if bit0 of the IP Address Response Control field is set to 1 or if bit0 of IP Address Response Control field is set to 0 and bit1 of IP Address Response Control field is set to 0.

An AP sets the DNS Server IPv6 address Present bit to 1 if the IPv6 DNS server IPv6 address is present in the element and sets it to 0 otherwise. This field is set to 0 if bit0 of the IP Address Response Control field is set to 1 or if bit0 of IP Address Response Control field is set to 0 and bit3 of IP Address Response Control field is set to 0.

An AP sets the IPv4 DNS Server MAC Address Present bit to 1 if the MAC address to which IPv4 based DNS queries may be sent is present in the element and sets it to 0 otherwise. This field shall be set to 0 if bit0 of the IP Address Response Control field is set to 1 or if bit0 of IP Address Response Control field is set to 0 and bit1 of the IP Address Response Control field is set to 0.

An AP sets the IPv6 DNS Server MAC Address Present bit to 1 if the MAC address to which IPv6 based DNS queries may be sent is present in the element and sets it to 0 otherwise. This field shall be set to 0 if bit0 of the IP Address Response Control field is set to 1 or if bit0 of IP Address Response Control field is set to 0 and bit3 of the IP Address Response Control field is set to 0.

[CID6153]

If bit0 of the IP Address Response Control field is set to 0 and bit1 of the IP Address Response Control field is set to 1, then the Assigned IPv4 address field is present and the value is set to the assigned IPv4 address.

If bit0 of the IP Address Response Control field is set to 0 and bit1 of the IP Address Response Control field is set to 1, then the Subnet Mask field is present and its value is equal to the subnet mask of the IPv4 subnet.

If bit0 of the IP Address Response Control field is set to 0 and bit2 of the IP Address Response Control field is set to 1, then the IPv4 Gateway Address field is present and its value is equal to the IPv4 address of the IPv4 gateway.

If bit0 of the IP Address Response Control field is set to 0 and bit2 of the IP Address Response Control field is set to 1, then the IPv4 Gateway MAC Address fields is present and its value equal to the MAC address of the IPv4 gateway.

If bit0 of the IP Address Response Control field is set to 0 and bit3 of the IP Address Response Control field is set to 1, then the Assigned IPv6 Address field is present and is equal to the assigned IPv6 address.

If bit0 of the IP Address Response Control field is set to 0 and bit3 of the IP Address Response Control field is set to 1, then the Prefix Length field is present and its value is equal to the prefix length of the IPv6 network.

If bit0 of the IP Address Response Control field is set to 0 and bit4 of the IP Address Response Control field is set to 1, then the IPv6 Gateway Address field is present and is equal to the IPv6 address of the IPv6 Gateway.

If bit0 of the IP Address Response Control field is set to 0 and bit4 of the IP Address Response Control field is set to 1, then the IPv6 Gateway MAC Address field is present and is equal to the MAC address of the IPv6 Gateway.

If bit0 of the IP Address Response Control field is set to 0 and bit5 of the IP Address Response Control field is set to 1, then the Lifetime of the Assigned IPv4 Address field is present and is equal to the IPv4 Time to Live in the unit of seconds. If the field is not present, then the IPv4 address is assumed to be valid during the entire time of association with the AP.

If bit0 of the IP Address Response Control field is set to 0 and bit6 of the IP Address Response Control field is set to 1, then the Lifetime of the Assigned IPv6 Address field is present and is equal to the IPv6 Time to Live in the unit of seconds. If the field is not present, then the IPv6 address is assumed to be valid during the entire time of association with the AP.

[CID6562]

The value of the DNS Server IPv4Address is the IPv4 address of the DNS server if the DNS Server IPv4 address Present bit of the DNS Info Control is 1. The field is absent otherwise.

The value of the DNS Server IPv6Address is the IPv6 address of the DNS server if the DNS Server IPv6 address Present bit of the DNS Info Control is 1. The field is absent otherwise.

The value of the IPv4 DNS Server MAC Address is the MAC address of the IPv4 DNS server if the IPv4 DNS Server MAC Address Present bit of the DNS Info Control is 1. The field is absent otherwise.

The value of the IPv6 DNS Server MAC Address is the MAC address of the IPv6 DNS server if the IPv6 DNS Server MAC Address Present bit of the DNS Info Control is 1. The field is absent otherwise.

***Instruct the editor to add the following paragraph at the end of the section as indicated: [14/0413r0]***

**10.45.3.2 FILS IP address configuration**

[…]

[CID6117] If a non-AP STA determines a duplicate IP address assignment (through means that are out of scope for this standard), it may discard the assigned IP address and request a new IP address.