Definitions of Managed Objects for MAP-E

draft-fu-softwire-map-mib-00

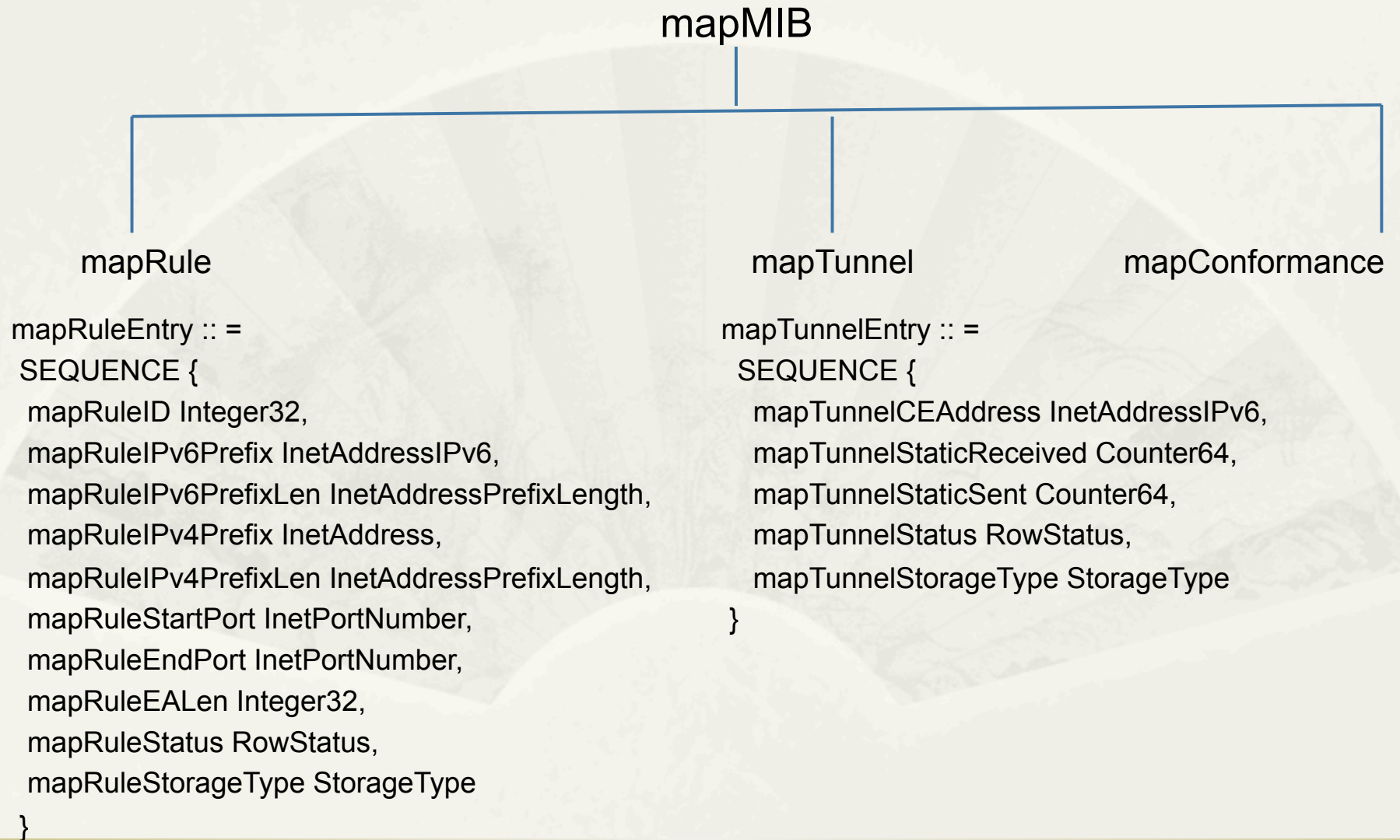*Yu Fu, Sheng Jiang, Bing Liu (Speaker), Jiang Dong, Peng Wu*

Why we need MAP-E MIB

* [RFC 4087] defined tunnel MIB, supporting various tunnels such as IP-in-IP, GRE, etc.

* However, "Tunnels" in a MAP-E BR is different with the "Tunnels" supported in [RFC 4087]

* MAP-E derives stateless tunnels based on the mapping rules. We need to extend the tunnel MIB by some parameters of mapping rules.

What we need in the MAP-E MIB

* Mapping Rules: which are essential information for MAP-E auto tunnels, and the only tunnel-relevant entries that must be stored in BR/CE.

* Tunnel info: a tunnel in MAP-E BR means a specific CE connected/connecting to it.

* Conformance (common requirement)

Subtree of MAP-E MIB

mapMIB

mapRule   mapTunnel   mapConformance

```
mapRuleEntry :: =
 SEQUENCE {
  mapRuleID Integer32,
  mapRuleIPv6Prefix InetAddressIPv6,
  mapRuleIPv6PrefixLen InetAddressPrefixLength,
  mapRuleIPv4Prefix InetAddress,
  mapRuleIPv4PrefixLen InetAddressPrefixLength,
  mapRuleStartPort InetPortNumber,
  mapRuleEndPort InetPortNumber,
  mapRuleEALen Integer32,
  mapRuleStatus RowStatus,
  mapRuleStorageType StorageType
 }
```

```
mapTunnelEntry :: =
 SEQUENCE {
  mapTunnelCEAddress InetAddressIPv6,
  mapTunnelStaticReceived Counter64,
  mapTunnelStaticSent Counter64,
  mapTunnelStatus RowStatus,
  mapTunnelStorageType StorageType
 }
```

Comments and suggestions are welcomed!

Adopt as softwire WG item?

(Radius Attribute for MAP
to be continued in next slide)

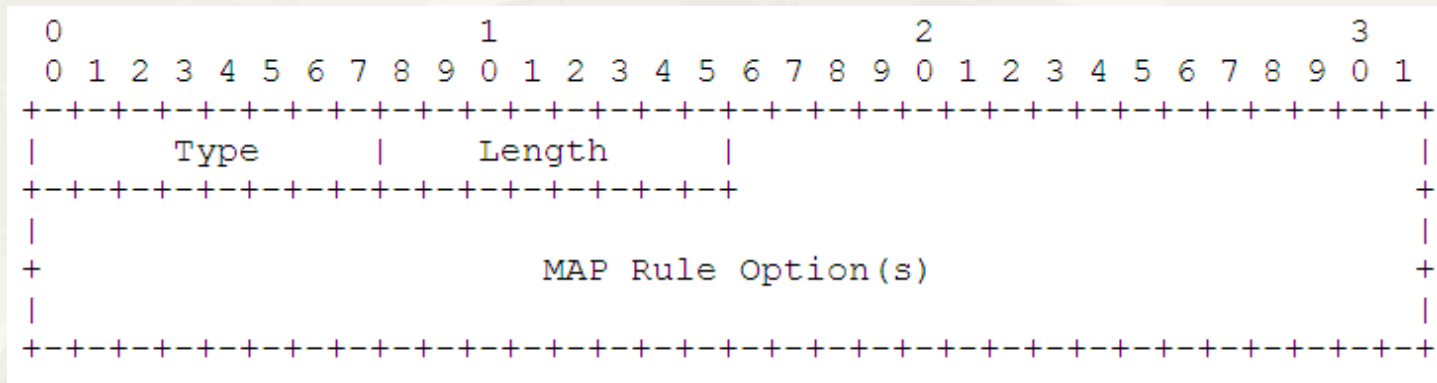# Radius Attribute for MAP

draft-jiang-softwire-map-radius-02

Sheng Jiang, Yu Fu, Bing Liu (Speaker), Peter Deacon

Background

* In many networks, user configuration information may be managed by AAA

* In a fixed line broadband network, the Broadband Network Gateways (BNGs) act as the access gateway of users.

* MAP configuration information may be stored in AAA servers and user configuration is mainly through DHCPv6 protocol between BNGs and hosts/CEs.

* New RADIUS attributes are needed to propagate the information from AAA servers to BNGs.

* The MAP RADIUS attribute are designed for providing enough information to form the correspondent DHCPv6 MAP option. [I-D.mdt-softwire-map-dhcp-option].

Attribute Definition

* MAP-Configuration Attribute

```
 0                   1                   2                   3
 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|      Type        |       Length          |                   |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+                   +
|                                                              |
+                     MAP Rule Option(s)                       +
|                                                              |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
```

* MAP Rule Options

```
 0                   1                   2                   3
 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|      Type        |       Length          |                   |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+                   +
|                                                              |
+                        Sub Options                           +
|                                                              |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
```
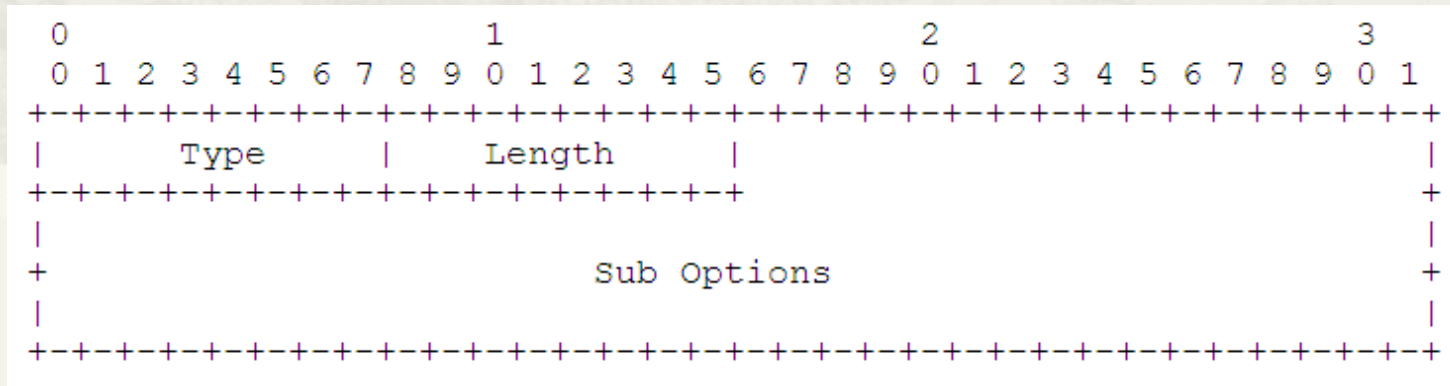
Attribute Definition

* MAP Rule Options
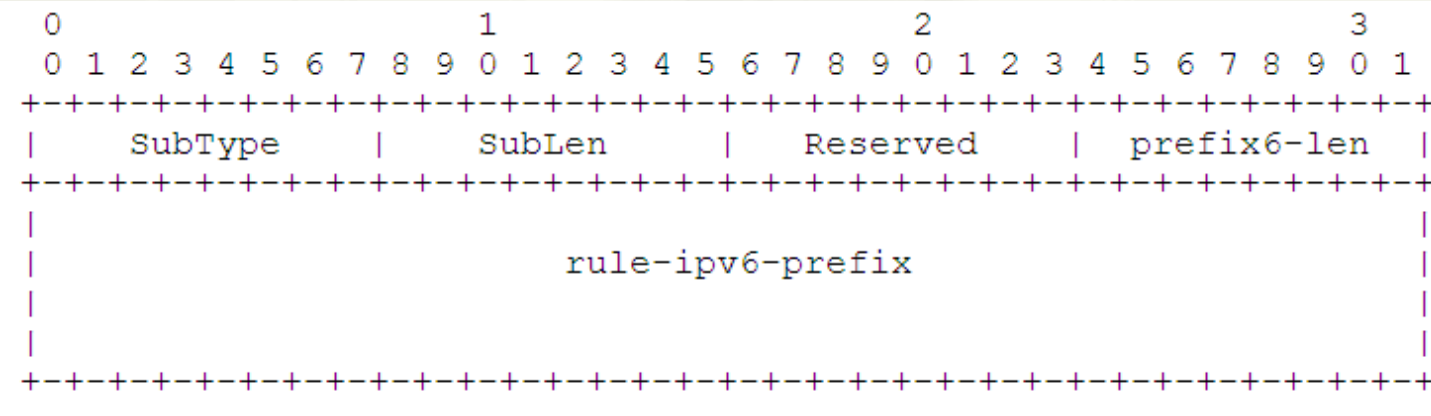
Type:

1 Default Mapping Rule

2 Basic Mapping Rule (Not Forwarding Mapping Rule)
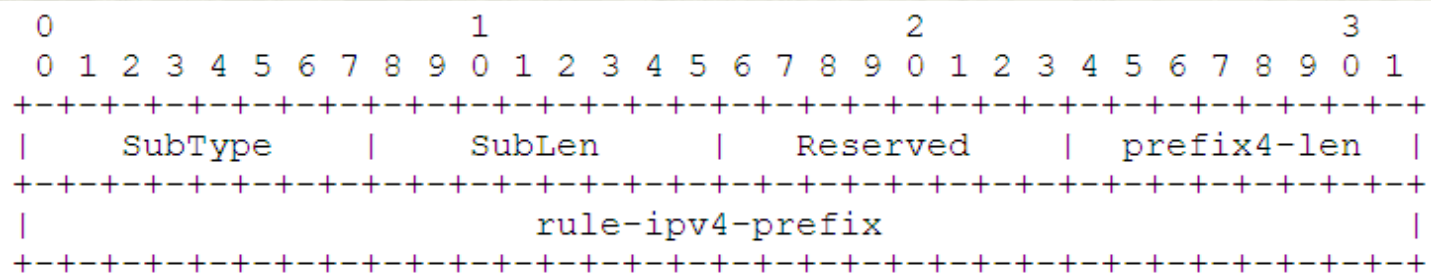
3 Forwarding Mapping Rule (Not Basic Mapping Rule)

4 Basic & Forwarding Mapping Rule
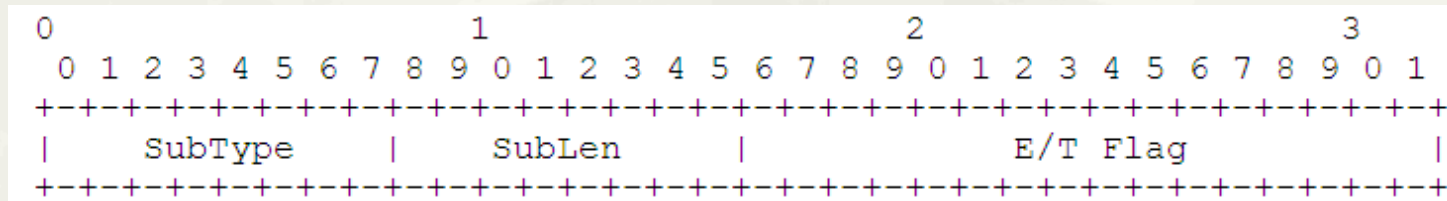
Sub options

* ## Rule-IPv6-Prefix Sub Option

```
 0                   1                   2                   3
 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|     SubType     |     SubLen      |    Reserved     | prefix6-len |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|                                                               |
|                      rule-ipv6-prefix                         |
|                                                               |
|                                                               |
|                                                               |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
```

* ## Rule-IPv4-Prefix Sub Option

```
 0                   1                   2                   3
 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|     SubType     |     SubLen      |    Reserved     | prefix4-len |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|                      rule-ipv4-prefix                         |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
```

Sub options (cont.)

* Encapsulation/Translation Flag Sub Option

```
 0                   1                   2                   3
 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|       SubType       |       SubLen      |       E/T Flag       |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
```

* PSID & PSID Length & PSID Offset Sub Options

```
 0                   1                   2                   3
 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|       SubType       |       SubLen      |         PSID          |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
```

```
 0                   1                   2                   3
 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|       SubType       |       SubLen      |        PSID-len       |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
```

```
 0                   1                   2                   3
 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|       SubType       |       SubLen      |       PSID Offset     |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
```
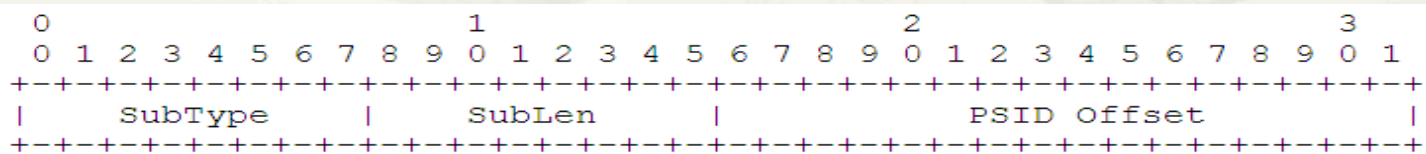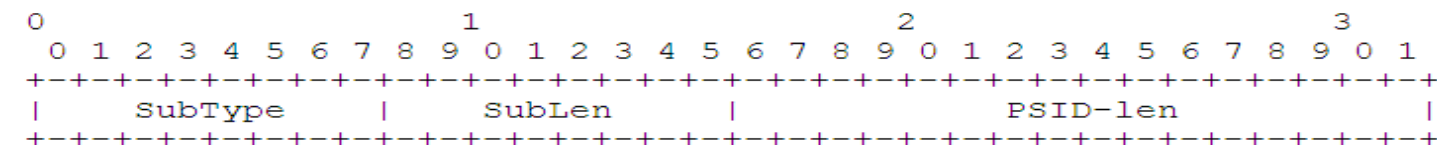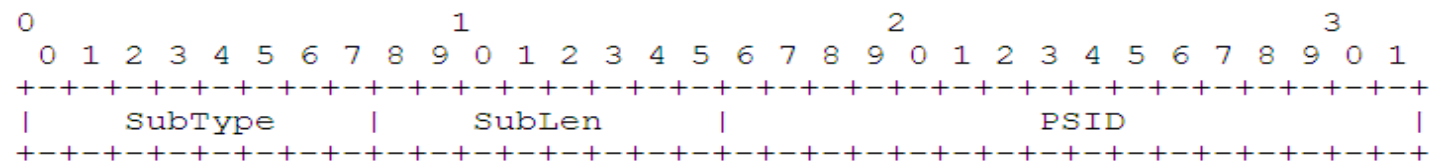
Comments and suggestions are welcomed!

Adopt as softwire WG item?

Thank you!

6 Nov @softwire, Atlanta