IP Multimedia Subsystem (IMS) provides a framework and building blocks for building advanced telecom services. One such service is network-wide publication and subscription of presence information. Users can subscribe to presence information for their contacts. If the contact accepts their request, the subscriber will be registered for presence notification.

When you subscribe to the "friends and family" list, a Resource List Server (RLS) in the IMS subscribes to the individual subscribers (presentities) on your behalf. Once the RLS completes the registrations, it collates the individual presence status into a single NOTIFY message.

To initiate a subscription to the RLS, the UE generates a SUBSCRIBE request indicating support for "eventlist", together with an indication of the length of time this periodic subscription should last.

The P-CSCF looks up the serving network information for the Watcher's public user identity that was stored during the registration procedure. The SUBSCRIBE request is forwarded to S-CSCF.

Watcher S-CSCF performs an analysis of the Resource List SIP URI and forwards the SUBSCRIBE request directly to the Resource List Server's Application Server.

The Presence Server (PS) performs the necessary authorization checks on the Watcher to ensure it is allowed to watch the Resource List.

If all privacy conditions are met, PS sends a 200 (OK) response to the P-CSCF. The 200 (OK) is passed all the way to Watcher RLS. The NOTIFY gets routed to the watching subscriber via the S-CSCF and P-CSCF.

After the Home RLS responds to the SUBSCRIBE request from the UE, it generates the necessary SUBSCRIBE requests to the presentities present in the resource list.

The Watcher acknowledges the NOTIFY request with a 200 (OK) to the P-CSCF. The 200 (OK) is passed to RLS.

Watcher S-CSCF performs an analysis of the Presence URI and forwards the SUBSCRIBE request directly to the Presence PUA1's home network's CSCF i.e. I-CSCF in the destination network.

The Presentity1 I-CSCF forwards the SUBSCRIBE request to the Presentity1 S-CSCF that will handle the termination.

The S-CSCF forwards the SUBSCRIBE request to the PS.

The PS performs the necessary authorization checks on the Watcher to ensure it is allowed to watch the presentity.

The PSI detects that Presentity1's UE has been switched off which modifies its presence state information.

PS sends a NOTIFY request with the current state of the presentity's presence information that the watcher has subscribed and been authorized to.

The Watcher S-CSCF forwards NOTIFY to Home RLS.
**Presence feature subscribing to Resource List (IMS Presence Subscription to a Resource List)**

- **Watcher User Equipment**
- **Visited Network**
- **Presence1 Home Network**
- **Presence2 Home Network**
- **EventStudio System Designer 4.0**

The Home RLS generates a 200 (OK) response to the NOTIFY request. The message is passed to PS as shown.

**SUBSCRIBE**

```
SUBSCRIBE
event = presence, Request URI = Presentity2 URI, expires = 7200, route = <Watcher S-CSCF>, from = Home RLS
```

The Resource List Server initiates a subscription request to the second user in the Resource List.

**Authorization of watcher**

The PS performs the necessary authorization checks on the Watcher to ensure it is allowed to watch the presentity.

If all privacy conditions are met, PS sends a 200 (OK) response to the S-CSCF. 200 (OK) is passed all the way to Watcher.

**SUBSCRIBE**

```
SUBSCRIBE
event = presence, Request URI = Presentity2 URI, expires = 7200, route = <Home RLS>, <Watcher S-CSCF>, from = Watcher URI
```

The presence server for the second user generates a NOTIFY request to update the subscription status.

**SUBSCRIBE**

```
SUBSCRIBE
event = presence, Request URI = Presentity2 URI, expires = 7200, route = <Presentity2 S-CSCF>, from = Watcher URI
```

**SUBSCRIBE**

```
SUBSCRIBE
event = presence, Request URI = Presentity2 URI, expires = 7200, route = <Presentity2 S-CSCF>, <PS2>, from = Watcher URI
```

The Home RLS copies the body of the incoming NOTIFY request(s) into the body of the outgoing NOTIFY request to Watcher.

**NOTIFY**

```
NOTIFY
To = Home RLS, From = Presentity2 URI, Route = <Watcher S-CSCF>, event = presence, Presence information
```

The Watcher acknowledges the NOTIFY request with a 200 (OK) to the P-CSCF. The 200 (OK) is passed to RLS.

**NOTIFY**

```
NOTIFY
To = Watcher URI, From = Resource List SIP URI, Route = <Watcher P-CSCF>, event = presence, Presence information
```

The Home RLS generates a NOTIFY request to update the subscription status.

**NOTIFY**

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NOTIFY
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event = presence, Request URI = Presentity2 URI, expires = 7200, route = <Home RLS>, <Watcher S-CSCF>, from = Watcher URI
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