Watcher S-CSCF Interfaces (IMS Presence Subscription to a Resource List)

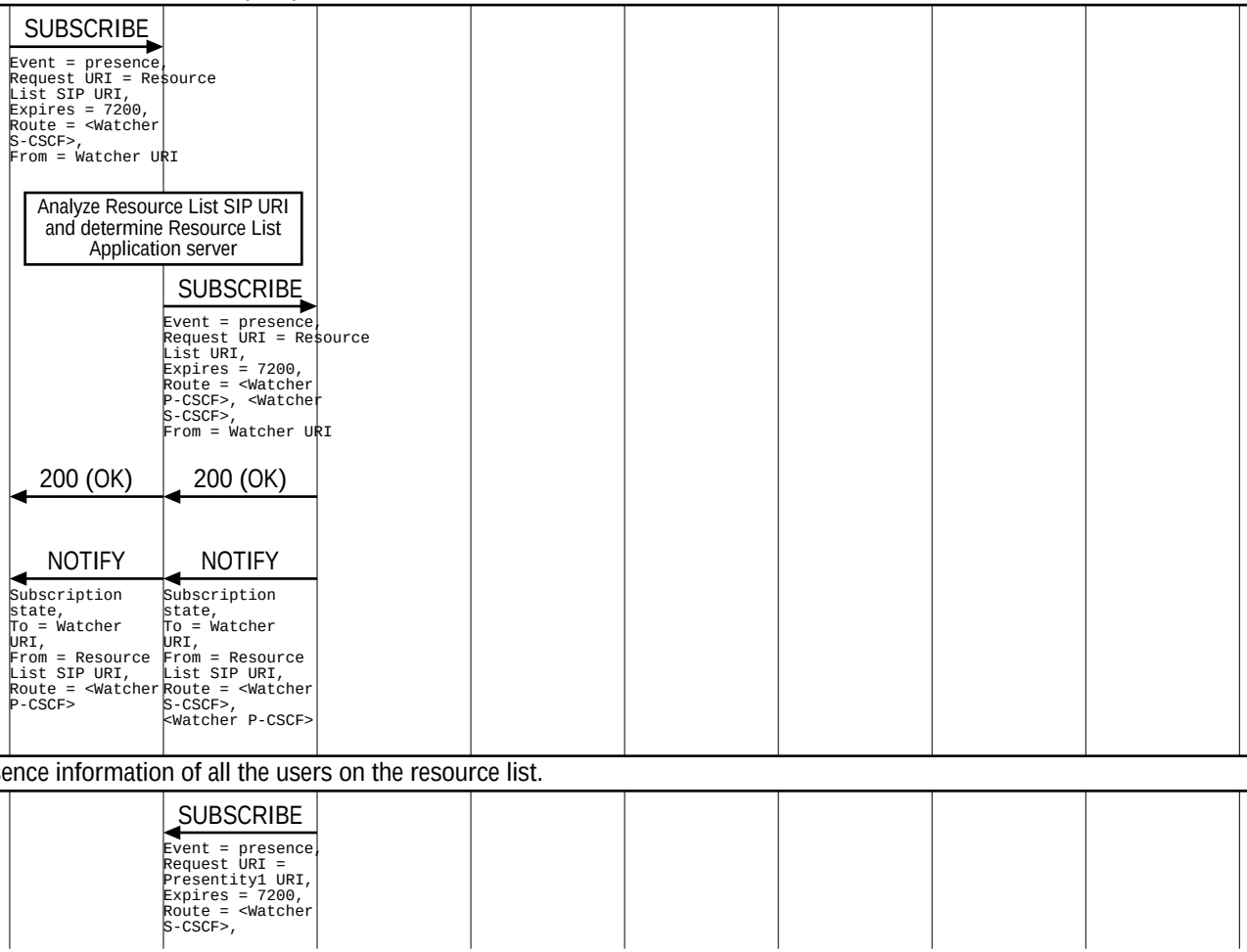
Watcher UE	Watcher IMS Network			Presentity IMS Networks						EventStudio System Designer 4.0
Watcher User Equipment	Watcher Visited Network	Watcher Home Network		Presentity1 Home Network			Presentity2 Home Network			
Watcher	Watcher P-CSCF	Watcher S-CSCF	Resource List Server	Presentity1 I-CSCF	Presentity1 S-CSCF	Presence Server 1	Presentity2 I-CSCF	Presentity2 S-CSCF	Presence Server 2	12-Apr-08 09:28 (Page 1)

This sequence diagram was generated with EventStudio System Designer 4.0 (http://www.EventHelix.com/EventStudio). Copyright © 2008 EventHelix.com Inc. All Rights Reserved. The EventStudio source files for this document can be downloaded from http://www.eventhelix.com/call-flow/ims-presence-resource-list.zip.

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. Whenever the friend publishes presence information, the IMS presence framework will notify the subscribed users.

IMS presence information communication can put a lot of load on the network. One way to reduce this load is to predefine the list of friends and family. 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.

User subscribes to the Resource List Server (RLS)



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's Application Server.

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

RLS generates a NOTIFY request including the subscription state as a result of the SUBSCRIBE request. The NOTIFY gets routed to the watching subscriber via the S-CSCF and P-CSCF.

Subscribe to the presence information of all the users on the resource list.

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.

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Watcher	Watcher P-CSCF	Watcher S-CSCF	Resource List Server	Presentity1 I-CSCF	Presentity1 S-CSCF	Presence Server 1	Presentity2 I-CSCF	Presentity2 S-CSCF	Presence Server 2	12-Apr-08 09:28 (Page 2)

200 (OK) 200 (Ok)

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

Analyze Presentity URI and determine Presentity I-CSCF

SUBSCRIBE

```
Event = presence,
Request URI = Presentity1 URI,
Expires = 7200,
Route = <Home RLS>, <Watcher S-CSCF>,
From = Watcher URI
```

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

200 (OK)

200 (OK)

The PS1 detects that Presentity1's UE has been switched off which modifies it presence state information.

NOTIFY

```
To = Home RLS,
From = Presentity1 URI,
Route = <Watcher S-CSCF>,
Event = presence,
Presence 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.

NOTIFY

```
To = Home RLS,
Record-Route = <Watcher
S-CSCF>,
Event = presence,
Presence information
```

The Watcher S-CSCF forwards NOTIFY to Home RLS.

200 (OK)

200 (OK)

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

SUBSCRIBE

```
Event = presence,
Request URI =
Presentity2 URI,
Expires = 7200,
Route = <Watcher
S-CSCF>,
From = Home RLS
```

Analyze Presentity URI and determine Presentity I-CSCF

SUBSCRIBE

```
Event = presence,
Request URI = Presentity2 URI,
Expires = 7200,
Route = <Home RLS>, <Watcher S-CSCF>,
From = Watcher URI
```

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

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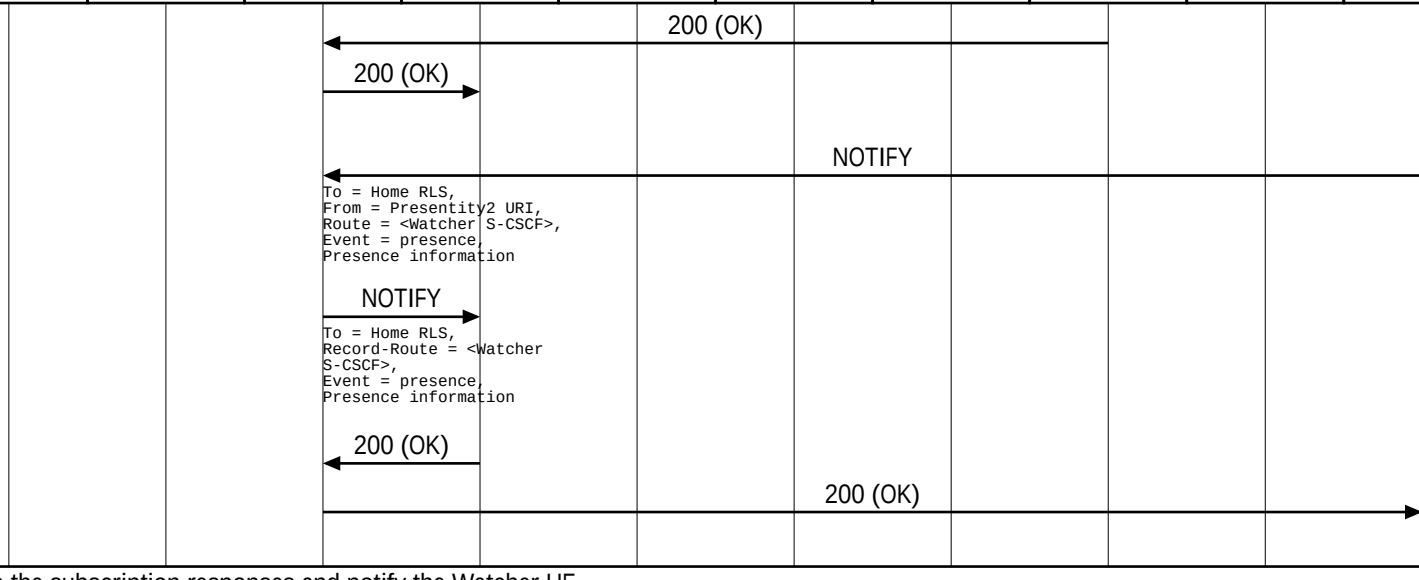
Watcher	Watcher P-CSCF	Watcher S-CSCF	Resource List Server	Presentity1 I-CSCF	Presentity1 S-CSCF	Presence Server 1	Presentity2 I-CSCF	Presentity2 S-CSCF	Presence Server 2	12-Apr-08 09:28 (Page 3)

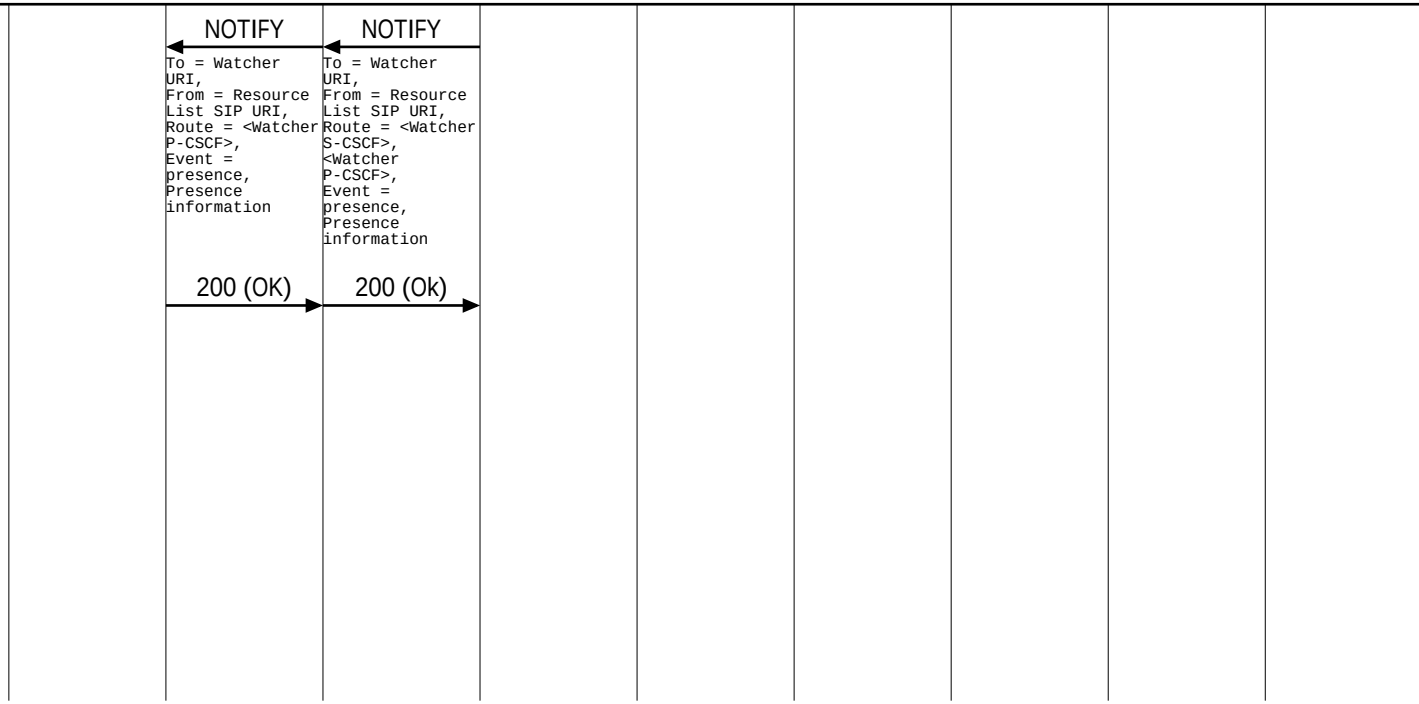


If all privacy conditions are met, PS sends a 200 (OK) response to the S-CSCF. 200 (OK) is passed all the way to Watcher.

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

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

Collate the subscription responses and notify the Watcher UE



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

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