

Presence Agent Module Documentation (work-in-progress)

1.0 November 18, 2004

1.01 December 9, 2004

The PIC WG presence and automatic location service architecture consists of three components: client software, server software, and the location aggregation architecture. This document describes the server software, pa.

The presence agent (**pa**) is a module for the open source SIPExpress Router (SER) code. It was created by Jan Janak in November 2002 and updated for the PIC WG by Jamey Hicks starting in December 2003. The pa module supports a server entity that records and advertises the presence status of users by receiving SUBSCRIBE messages and distributing NOTIFY messages. It also supports presence aggregation by receiving PUBLISH messages to update the original SUBSCRIBE presence indicators and redistributing the updated NOTIFY messages.

PA Database Specifications

presentity table: presid (primary key), uri, pdomain

- presid int(10) unsigned NOT NULL auto_increment
- uri varchar(128) NOT NULL
- pdomain varchar(128) NOT NULL

presentity_contact table: contacted (primary key), presid, basic, status, location, expires, placeid, priority, contact, tupleid, prescaps

- contactid int(10) unsigned NOT NULL auto_increment
- presid int(10) unsigned NOT NULL
- basic varchar(32) NOT NULL default 'offline'
- status varchar(32) NOT NULL default ''
- location varchar(128) NOT NULL default ''
- expires datetime not null default '2020-05-28 21:32:15'
- placeid int(10) default NULL
- priority float(5,2) not null default '0.5'
- contact varchar(128) default NULL
- tupleid varchar(16) not null
- prescaps int(10)

watcherinfo table: r_uri, w_uri, display_name, s_id (primary key), package, status, event, expires, accepts

- r_uri varchar(128) NOT NULL
- w_uri varchar(128) NOT NULL
- display_name varchar(128) NOT NULL
- s_id varchar(32) NOT NULL
- package varchar(32) NOT NULL default 'presence'
- status varchar(32) NOT NULL default 'pending'
- event varchar(32)
- expires int
- accepts varchar(64)

firstseen table: username (primary key), timestamp

- username varchar(64) not null primary key
- timestamp timestamp

eventlist table: elid (primary key), o_uri, l_uri, name, parent_elid, l_pos, version, subscribeable

- elid int(10) unsigned NOT NULL auto_increment
- o_uri varchar(128) NOT NULL -- owner uri
- l_uri varchar(128) NOT NULL -- list uri
- name varchar(128) NOT NULL
- parent_elid int(10) unsigned NOT NULL
- l_pos int(10) unsigned
- version varchar(32)
- subscribeable varchar(32)

eventlistitem table: itemid (primary key), elid, r_uri, r_name, r_id, display_name, cid, state

- itemid int(10) unsigned NOT NULL auto_increment
- elid int(10) unsigned NOT NULL
- r_uri varchar(128) NOT NULL
- r_name varchar(128)
- r_id varchar(128)
- display_name varchar(128)
- cid varchar(128)
- state varchar(32)

place table: placeid (primary key), room, room_number, floor, site, nestedid, contains, bugged, session_name, session_end, upstream_packet_loss, downstream_packet_loss

- placeid int(10) unsigned NOT NULL auto_increment
- room varchar(40) not null
- room_number int(10)
- floor int(10)
- site varchar(40)
- nestedid int(10)
- contains varchar(255)
- bugged int(10)
- session_name varchar(128)
- session_end datetime
- upstream_packet_loss float
- downstream_packet_loss float

Location Message format (Tbd)

Location aggregation methods - some examples

- HP Skiff technology
- SNMP polling for updates of MAC addresses (?) the wireless access points
- Manual location setting via the PALS portal
- Medical sensor networks
- DHCP civil option

Requirements for Alternative location aggregation (tbd)

PUBLISH messages (see the requirements specification)

Location Aggregation (maybe delete this)

The location of the database that stores presence-agent data is an exported parameter in SER and is set by passing a textual string into the parameter db_url.¹ For example,

```
modparam("pa", "db_url",mysql:ser:heslo@localhost/ser")
```

However, this is not the location feed, but a parameter used to set a (possibly) external database for pa information.

Features added to SER for PIC

Features	Date	pa Module Files Affected							
		pdif	pa_mod	pdomain	presentity	publish	subscribe	watcher	xpidf
<i>SIP Event State Publication support begun – RFC3903 SIP-If-Match header parsing done 12/4 but not yet SIP-ETag² Not yet committed to core SER as of 12/9</i>	<i>In process 12/04</i>								
PIDF compliance update – remove cpim	08/04	√				√			
PIDF compliance update – add prescaps to include user agent capabilities (e.g. video, audio, text, mobile) in presence notifications	08/04	√			√	√			
PIDF compliance update - presentity tuple ID for status from multiple devices for same person	08/04	√			√				
Permit xpidf or pdif xml format to be determined by subscriber	08/04						√		
Partial support for Windows Messenger (e.g. MSNSUBSTATUS) ³	08/04								√
Update multiple device support - per-contact priority and expires	06/04	√	√		√				
Add xcap authorization (e.g. subscribe, approved, deactivated, probation, rejected, timeout, giveup, noresource) mechanism to allow others to subscribe to your presence information. Add watcher status (e.g. pending, active, waiting, terminated).	06/04							√	
Add support for multiple devices within pidf – add contact info to distinguish presentity_contact and presentity	04/04	√	√	√	√	√	√	√	

¹ See the pa README, 1.3.3

² Gregory McGarry added/updated code in the parser module, outside the pa module

³ On these patches, some credit due to a developer other than Jamey Hicks.

Features	Date	pa Module Files Affected							
		pdfif	pa_mod	pdomain	presentity	publish	subscribe	watcher	xpidf
		Add support for event packages for presence, watcherinfo, and xcap-change (e.g. application/xcap-change+xml, application/location)	01/04	√	√	√	√	√	√
Add more location details (e.g. contact, geopriv civilAddress, packetloss)	01/04	√							
Add more location fields (e.g. site, floor, room, x, y, radius) ³	12/03	√	√		√	√	√		
Add more support for presentity – synch to database	12/03	√	√		√	√			
Add more support for presentity – both via PUBLISH messages and direct ser (fifo) commands	12/03					√			
Add presentity database table – address and status (e.g. unknown, online, offline, away, xaway, dnd, typing)	12/03	√	√		√				
Add application/pidf+xml notifications	12/03	√				√	√		
Add PUBLISH, presence update via direct ser (fifo), and application/pidf+xml	12/03		√	√		√		√	
Add XP Messenger kluge for missing accept header	12/03	√							√
Add watchers and winfo watchers, and initial support for presence.winfo event package (application/watcherinfo+xml)	12/03				√	√	√	√	

Other interesting features added (not a complete list)

pa_mod

- Change db api: now several db modules can be used simultaneously; all the modules were updated to use the new api (andrei, 06/04)

Terminology

application/pidf+xml - a mime type based on PIDF

CPP - Common Profile for Presence

LPIDF - Lightweight Presence Information Format. An early data format for conveying presence information, based on RFC811 encoding (like SIP registration messages)

PIDF - Presence Information Data Format

prescaps - extension to PIDF to include user agent capabilities (e.g. video, audio, text, mobile) in presence notifications.

presence - information describing user state and changes to state, usually for the purpose of publishing and providing subscription updates to a set of users

presence service - accepts, stores, and distributes presence information
presentity - client that provides presence information to be stored and distributed

XCAP - XML Configuration Access Protocol. A client can use XCAP to read and write application configuration data stored in XML format on a server. Must use xcap to do instant messaging and presence on sip. Sipc may be the only UA that does this.

xpidf - ????

watcher - client that receives presence information from the presence service. Fetcher requests current presence, subscriber requests notification of upcoming changes to presence.

References

SER CVS Repository comments for the pa module

SER readme for pa module

PIC website - client requirements