



Extending Adempiere:

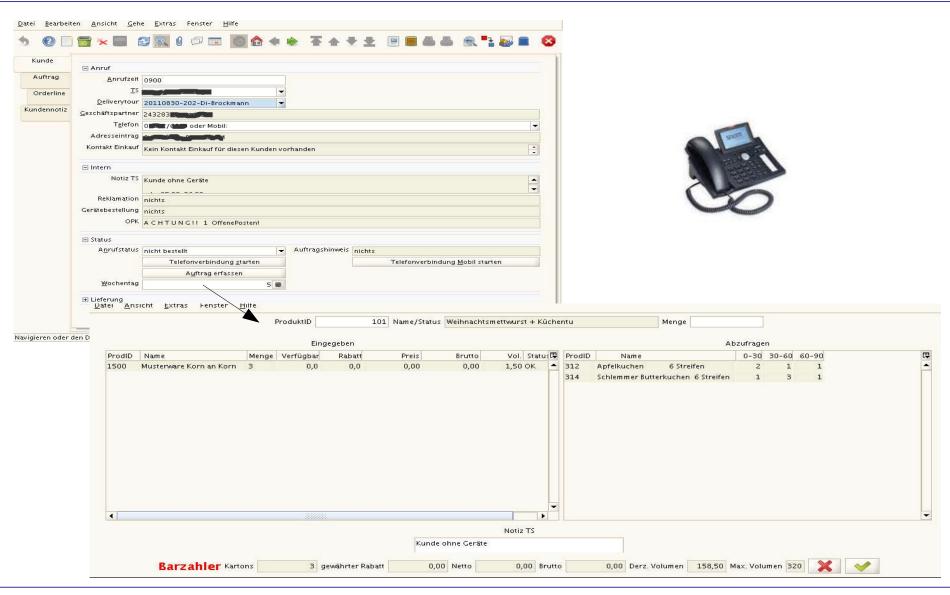
Dialing out via Asterisk

Dirk Niemeyer action 42 GmbH



Background

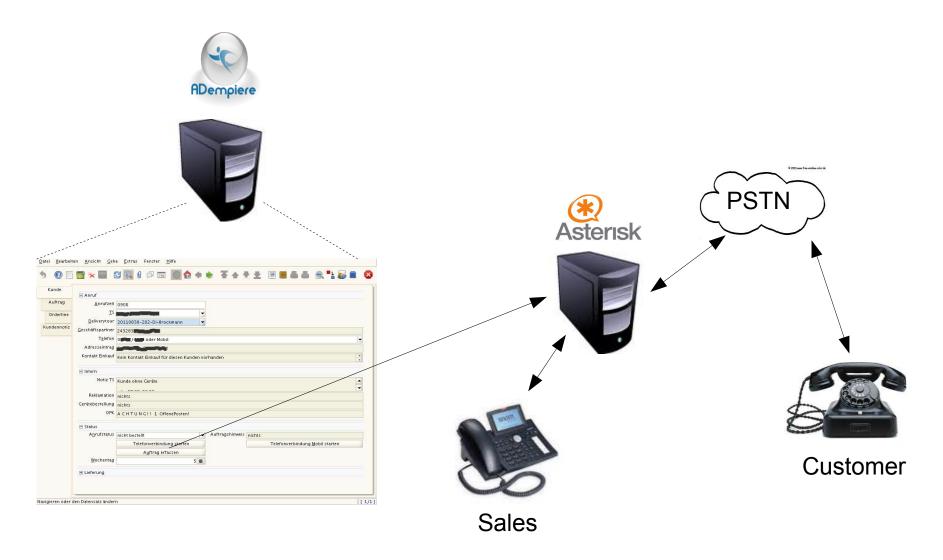






Solution









- Adempiere
- Asterisk (V1.4)
- Asterisk Manager Interface (AMI)
- Asterisk-Java library (V0.3.1)
- IP-Phone
- Telephony-Card (ISDN,...)



Asterisk Manager API



Manager Actions

Output from the CLI command show manager commands: (For Asterisk 1.4 and greater, use manager show commands)

- AbsoluteTimeout: Set Absolute Timeout (privilege: call, all)
- <u>ChangeMonitor</u>: Change monitoring filename of a channel (privilege: call, all)
- Command: Execute Command (privilege: command,all)
- Events: Control Event Flow
- o ExtensionState: Check
- O Hangup: Hangup Char
- IAXpeers: List IAX Pee
- O ListCommands: List av
- Logoff: Logoff Manage
- MailboxCount: Check I
- O MailboxStatus: Check
- Monitor: Monitor a cha
- Originate: Originate C.
- o ParkedCalls: List park
- Ping: Ping
- QueueAdd: Queues ()
- O QueueRemove: Queue
- Queues: Queues
- QueueStatus: Queue
- Redirect: Redirect (pri
- o SetCDRUserField: Set
- SetVar: Set Channel V
- O SIPpeers: List SIP Pee

5

- Status: Status (privilege: call,all)
- StopMonitor: Stop monitoring a channel (privilege: call.all)
- O ZapDialOffhook: Dial over Zap channel while offhook
- ZapDNDoff: Toggle Zap channel Do Not Disturb status OFF
- O ZapDNDon: Toggle Zap channel Do Not Disturb status ON
- o ZapHangup: Hangup Zap Channel
- O ZapTransfer: Transfer Zap Channel
- ZapShowChannels: Show Zap Channels

• GetVar: Gets a Chann Asterisk Manager API Action Originate

Action: Originate Parameters:

- Channel: Channel on which to originate the call (The same as you specify in the Dial application command)
- Context: Context to use on connect (must use Exten & Priority with it)
- Exten: Extension to use on connect (must use Context & Priority with it)
- Priority: Priority to use on connect (must use Context & Exten with it)
- Timeout: Timeout (in milliseconds) for the originating connection to happen(defaults to 30000 milliseconds)
- CallerID: CallerID to use for the call
- Variable: Channels variables to set (max 32). Variables will be set for both channels (local and connected).
- · Account: Account code for the call
- Application: Application to use on connect (use Data for parameters)
- Data: Data if Application parameter is used
- Async: For the origination to be asynchronous (allows multiple calls to be generated without waiting for a response)
- ActionID: The request identifier. It allows you to identify the response to this request. You may use a number or a string. Useful when you make several simultaneous requests.



Asterisk configuration



```
[manager]
                                                secret = mysecret
general]
                                                ;deny=0.0.0.0/0.0.0.0
                                                 ;permit=209.16.236.73/255.255.25.0
                                                permit=0.0.0.0/0.0.0.0
                                                ; If the device connected via this user accepts input slowly,
No access is allowed by default.
To set a password, create a file in /etc/asterisk/manager; the timeout for writes to it can be increased to keep it
use creative permission games to allow other serivces to
                                                  from being disconnected (value is in milliseconds)
                                                  writetimeout = 100
                                manager.conf
                                                  Authorization for various classes
                                                 ;write = system,call,log,verbose,command,agent,user,config
 username=3000
                                                 read = system,call,log,verbose,command,agent,user
 type=friend
                                                 write = system,call,log,verbose,command,agent,user
 secret=inspironsecret
 record out=Adhoc
 record in=Adhoc
                                     exten => 6245,hint,SIP/Grandstreaml&SIP/Xlitel,Joe Schmoe ; Channel hints:
 qualify=no
                                     exten => 6245,1,Dial(SIP/Grandstream1,20,rt)
                                                                                        ; permit transfer
 port=5060
                                     ;exten => 6245,n(dial),Dial(${HINT},20,rtT)
                                     exten => 6245,n,Voicemail(6245,u)
                                                                                        : Voicemail (unavailable)
 mailbox=3000@device
                                     ;exten => 6245,s+1,Hangup
                                                                                        ; s+l, same as n
 host=dynamic
                                     exten => 6245, dial+101, Voicemail(6245, b)
                                                                                        ; Voicemail (busy)
 dtmfmode=rfc2833
                                     exten => 6361,1,Dial(IAX2/JaneDoe,,rm)
                                                                                        ; ring without time limit
 context=from-internal
                                     exten => 6389,1,Dial(MGCP/aaln/10192.168.0.14)
  anreinvite=no
                                     exten => 6390,1,Dial(JINGLE/caller/callee) ; Dial via jingle using labels;
 callerid=device <3000>
                                     exten => 6391,1,Dial(JINGLE/asterisk@digium.com/mogorman@astjab.org) ;Dial;
                                      exten => 6394,1,Dial(Local/6275/n)
                                                                                        ; this will dial ${MARK}
```

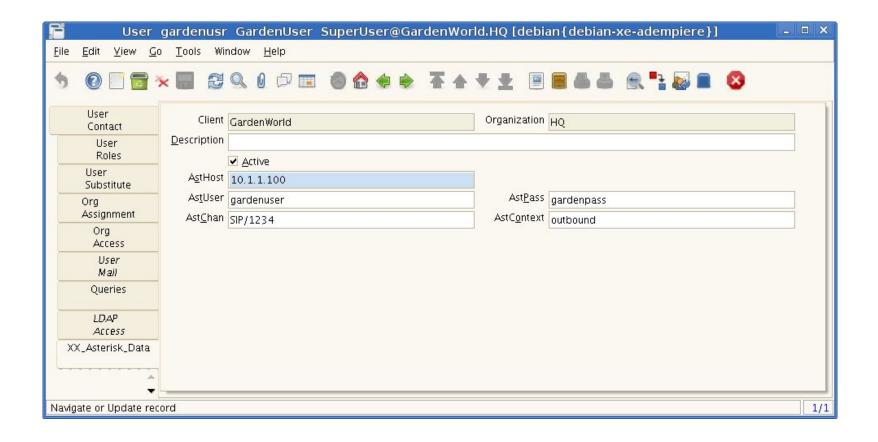
extensions.conf

sip.conf



Adempiere configuration







Adempiere interface



```
5 import org.asteriskjava.manager.AuthenticationFailedException;
 6 import org.asteriskjava.manager.ManagerConnection;
 7 import org.asteriskjava.manager.ManagerConnectionFactory;
 8 import org.asteriskjava.manager.TimeoutException;
 9 import org.asteriskjava.manager.action.OriginateAction;
10 import org.asteriskjava.manager.response.ManagerResponse;
11
12 public class AsteriskManager {
13
14
       private ManagerConnection managerConnection;
15
160
       public AsteriskManager(String server, String user, String pw) throws IOException
17
18
            ManagerConnectionFactory factory = new ManagerConnectionFactory(
19
                    server, user, pw); // e.g. "192.168.1.11", "manager", "mysecret");
20
21
            this.managerConnection = factory.createManagerConnection();
22
23
240
        public String run(String astChannel, String astContext, String astExten, Integer astPrority, Long astTimeout) throws
25
               TimeoutException
26
       {
27
            OriginateAction originateAction;
28
            ManagerResponse originateResponse;
29
30
            originateAction = new OriginateAction();
31
            originateAction.setChannel(astChannel);
32
            originateAction.setContext(astContext);
33
            originateAction.setExten(astExten);
34
            originateAction.setPriority(astPrority);
35
            originateAction.setTimeout(astTimeout);
36
37
            // connect to Asterisk and log in
38
            managerConnection.login();
39
            // send the originate action and wait for a maximum of 30 seconds for Asterisk
40
41
            // to send a reply
42
            originateResponse = managerConnection.sendAction(originateAction, 30000);
43
            // print out whether the originate succeeded or not
44
45
            String result = originateResponse.getResponse();
46
47
            // and finally log off and disconnect
48
            managerConnection.logoff();
49
50
            return(result);
51
```



Adempiere process



```
* Generate Orders from ToCall-List...
public class CallAsterisk extends SvrProcess
    protected void prepare()...
    protected String doIt() throws Exception[...]
                               // Search for the Asterisk Settings
                               String sql = "SELECT XX Asterisk Data ID FROM XX Asterisk Data " +
                               " WHERE AD User ID=" + adUserId
                               + " AND AD Client ID=" + Env.getAD Client ID(Env.getCtx());
                               PreparedStatement pstmt = null;
                               try {
                                   pstmt = DB.prepareStatement(sql, null);
                                   ResultSet rs = pstmt.executeQuery ();
                                   if (rs.next()) {
                                       xx asterisk data id = rs.getInt(1);
                                   rs.close ();
                                   pstmt.close ();
                                   pstmt = null;
                               catch (SQLException e)
                                   log.log(Level.SEVERE, sql, e);
                               log.log(Level.FINE, "CallAsterisk - adUserId=" + adUserId);
                               log.log(Level.FINE, "CallAsterisk - astExten=" + astExten);
                               X XX Asterisk Data astData = new X XX Asterisk Data(Env.getCtx(),xx asterisk data id,null);
                               astChannel = astData.getAstChan();
                               astContext = astData.getAstContext();
                               log.log(Level.FINE, "CallAsterisk - astChannel=" + astChannel + ", astContext=" + astContext);
                               log.log(Level.FINER, "CallAsterisk", Calling AsteriskManager with AstHost-" + astData getAstHost() + " AstUser-" + astData.getAstUser()
                               AsteriskManager asteriskManager = new AsteriskManager(astData.getAstHost(),astData.getAstUser(),astData.getAstPass());
                               log.log(Level.FINER_ "CallAsterisk - Calling AsteriskManager run");
                               String result = asteriskManager.run(astChannel, astContext, astExten, astPrority, astTimeout);
                               return "@Ergebnis@ = " + result;
```



Resomendiesits



- Asterisk
 - http://www.asterisk.org
- Asterik-Java
 - http://asterisk-java.org
- Asterisk Manage API
 - http://www.voip-info.org/wiki/ view/Asterisk+manager+API
- Adempiere Wiki
 - http://www.adempiere.com/AsteriskJava



Questions









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