E911 Manager and Active Directory Integration Guide

An Everbridge Product
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Using the Active Directory Integration in E911 Manager 6.14.x

After defining the **Active Directory (AD)** domain name during the installation process, that domain will be used to form a query to the server using **Java JNDI API**. Unlike version 6.12 or earlier of Manager, an admin or control AD account is no longer needed.

For example, assume that a username of 'john' has a domain name of "ldap.acme.com." During the login process, a request is sent to the domain using the LDAP protocol (e.g., `ldap://john@ldap.acme.com`). If the AD server successfully validates the user, access to the Manager application will be granted. If validation fails, the user will see a login error message.

From the Manager logs (for instance `e911manager-debug.log`), look for an entry like the one below to further analyze the exchange between the Manager and the AD server:

```
DEBUG [sky.control.LocationController:125 ] Attempting to authenticate
earias@ldap.acme.com with server ldap://ldap.acme.com
```

```
INFO [m.redsky.web.login.LoginAction:161 ] {10.0.22.180:earias:system:}
User 'earias' logged in
```

Failed Login

If the login fails, the following can be seen in the same logs:

```
DEBUG [sky.control.LocationController:125 ] Attempting to authenticate
earias@ldap.acme.com with server ldap://ldap.acme.com
```

```
ERROR [sky.control.LocationController:132 ]
{10.0.22.180:earias:system:} Invalid username or password - [LDAP:
error code 49 - 80090308: LdapErr: DSID-0C090439, comment:
AcceptSecurityContext error, data 52e, v4563^@]
```

```
DEBUG [sky.control.LocationController:132 ]
```

```
javax.naming.AuthenticationException: [LDAP: error code 49 - 80090308:
LdapErr: DSID-0C090439, comment: AcceptSecurityContext error, data 52e,
v4563^@]

        at com.sun.jndi.ldap.LdapCtx.mapErrorCode(LdapCtx.java:3261)
~[?:1.8.0_432]
```

```
        at
com.sun.jndi.ldap.LdapCtx.processReturnCode(LdapCtx.java:3207)
~[?:1.8.0_432]

        at
com.sun.jndi.ldap.LdapCtx.processReturnCode(LdapCtx.java:2993)
~[?:1.8.0_432]

        at com.sun.jndi.ldap.LdapCtx.connect(LdapCtx.java:2907)
~[?:1.8.0_432]

        at com.sun.jndi.ldap.LdapCtx.<init>(LdapCtx.java:347)
~[?:1.8.0_432]

        at
com.sun.jndi.ldap.LdapCtxFactory.getLdapCtxFromUrl(LdapCtxFactory.java:229)
~[?:1.8.0_432]

        at
com.sun.jndi.ldap.LdapCtxFactory.getUsingURL(LdapCtxFactory.java:189)
~[?:1.8.0_432]

        at
com.sun.jndi.ldap.LdapCtxFactory.getUsingURLs(LdapCtxFactory.java:247)
~[?:1.8.0_432]

        at
com.sun.jndi.ldap.LdapCtxFactory.getLdapCtxInstance(LdapCtxFactory.java:154)
~[?:1.8.0_432]

        at
com.sun.jndi.ldap.LdapCtxFactory.getInitialContext(LdapCtxFactory.java:84)
~[?:1.8.0_432]

        at
javax.naming.spi.NamingManager.getInitialContext(NamingManager.java:695)
~[?:1.8.0_432]

        at
javax.naming.InitialContext.getDefaultInitCtx(InitialContext.java:313)
~[?:1.8.0_432]

        at javax.naming.InitialContext.init(InitialContext.java:244)
~[?:1.8.0_432]

        at javax.naming.InitialContext.<init>(InitialContext.java:216)
~[?:1.8.0_432]
```
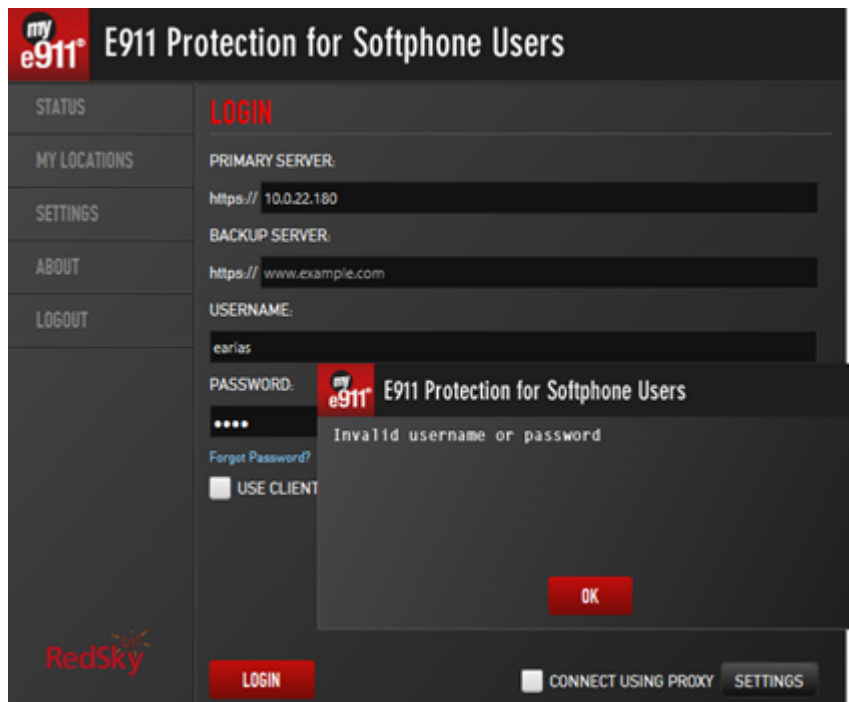
```
        at
javax.naming.directory.InitialDirContext.<init>(InitialDirContext.java:101)
~[?:1.8.0_432]
```

MyE911 Client and AD Server Interaction

Both the Windows and macOS versions of the MyE911 client will send a login request to the MyE911 server. The MyE911 server will then extract the username and password from the request and delegate the actual login logic to a module shared by it and E911 Manager. If the Manager is configured to use AD, then the MyE911 client will grant or reject access based on the AD server's response.

Note that nothing needs to be done within the MyE911 client itself to configure it to use AD since all configuration happens in the Manager.

Here's an example of the interaction between the MyE911 client, MyE911 server, and the login module:

```
TRACE [y.client.server.MessageHandler:132 ] login Request: <login
username="earias" uuid="60d97ea7-6f53-4356-bcfc-16a4cb683d1b"
macAddress="FA:KE:27:08:00:0C" osVersion="Microsoft Windows 10
Enterprise" deviceModel="Dell Inc., Precision 5540" pcName="LT-FAKE"
appVersion="3.16" apiVersion="4" password="*****" />

DEBUG [sky.control.LocationController:125 ] Attempting to authenticate
earias@lab.redskytech.com with server ldap://lab.redskytech.com
```

```
ERROR [sky.control.LocationController:132 ]
{10.0.22.180:earias:system:} Invalid username or password - [LDAP:
error code 49 - 80090308: LdapErr: DSID-0C090439, comment:
AcceptSecurityContext error, data 52e, v4563^@]

DEBUG [sky.control.LocationController:132 ]

javax.naming.AuthenticationException: [LDAP: error code 49 - 80090308:
LdapErr: DSID-0C090439, comment: AcceptSecurityContext error, data 52e,
v4563^@]
        at com.sun.jndi.ldap.LdapCtx.mapErrorCode(LdapCtx.java:3261)
~[?:1.8.0_432]
        at
com.sun.jndi.ldap.LdapCtx.processReturnCode(LdapCtx.java:3207)
~[?:1.8.0_432]
        at
com.sun.jndi.ldap.LdapCtx.processReturnCode(LdapCtx.java:2993)
~[?:1.8.0_432]
        at com.sun.jndi.ldap.LdapCtx.connect(LdapCtx.java:2907)
~[?:1.8.0_432]
        at com.sun.jndi.ldap.LdapCtx.<init>(LdapCtx.java:347)
~[?:1.8.0_432]
        at
com.sun.jndi.ldap.LdapCtxFactory.getLdapCtxFromUrl(LdapCtxFactory.java:229)
~[?:1.8.0_432]
        at
com.sun.jndi.ldap.LdapCtxFactory.getUsingURL(LdapCtxFactory.java:189)
~[?:1.8.0_432]
        at
com.sun.jndi.ldap.LdapCtxFactory.getUsingURLs(LdapCtxFactory.java:247)
~[?:1.8.0_432]
        at
com.sun.jndi.ldap.LdapCtxFactory.getLdapCtxInstance(LdapCtxFactory.java:154)
~[?:1.8.0_432]
        at
com.sun.jndi.ldap.LdapCtxFactory.getInitialContext(LdapCtxFactory.java:84)
~[?:1.8.0_432]
```

```
        at
javax.naming.spi.NamingManager.getInitialContext(NamingManager.java:695)
~[?:1.8.0_432]

        at
javax.naming.InitialContext.getDefaultInitCtx(InitialContext.java:313)
~[?:1.8.0_432]

        at javax.naming.InitialContext.init(InitialContext.java:244)
~[?:1.8.0_432]

        at javax.naming.InitialContext.<init>(InitialContext.java:216)
~[?:1.8.0_432]

        at
javax.naming.directory.InitialDirContext.<init>(InitialDirContext.java:101)
~[?:1.8.0_432]
```
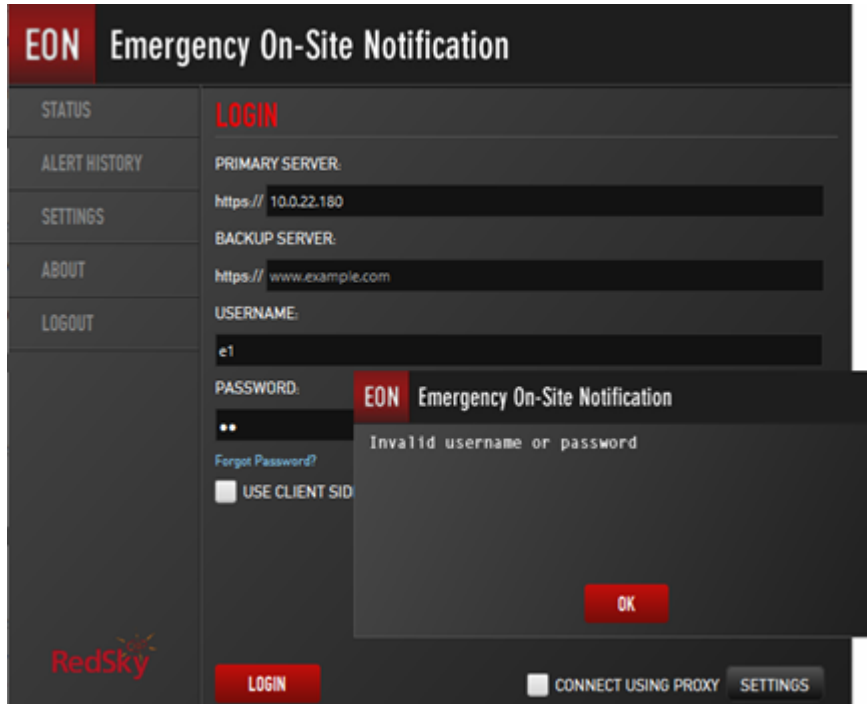
EON Client and AD Server Interaction

The same behavior explained above applies to the EON client, as well. It also does not require any AD configuration and leaves all login logic to the same login module used by the Manager and MyE911 server.

Here's an example of the interaction between the EON client, EON server, and the login module:

```
TRACE [y.client.server.MessageHandler:132 ] login Request: <login
username="e1" uuid="20fe44da-9b3f-4e5c-9fce-e078d03fc019"
macAddress="FA:KE:27:08:00:0C" osVersion="Microsoft Windows 10
Enterprise" deviceModel="Dell Inc., Precision 5540" pcName="LT-FAKE"
appVersion="3.14" apiVersion="4" password="*****" />

DEBUG [sky.control.LocationController:125 ] Attempting to authenticate
e1@lab.redskytech.com with server ldap://lab.redskytech.com

ERROR [sky.control.LocationController:132 ] {10.0.22.180:e1:system:}
Invalid username or password - [LDAP: error code 49 - 80090308:
LdapErr: DSID-0C090439, comment: AcceptSecurityContext error, data 52e,
v4563^@]

DEBUG [sky.control.LocationController:132 ]
```

```
javax.naming.AuthenticationException: [LDAP: error code 49 - 80090308:
LdapErr: DSID-0C090439, comment: AcceptSecurityContext error, data 52e,
v4563^@]

        at com.sun.jndi.ldap.LdapCtx.mapErrorCode(LdapCtx.java:3261)
~[?:1.8.0_432]

        at
com.sun.jndi.ldap.LdapCtx.processReturnCode(LdapCtx.java:3207)
~[?:1.8.0_432]

        at
com.sun.jndi.ldap.LdapCtx.processReturnCode(LdapCtx.java:2993)
~[?:1.8.0_432]

        at com.sun.jndi.ldap.LdapCtx.connect(LdapCtx.java:2907)
~[?:1.8.0_432]

        at com.sun.jndi.ldap.LdapCtx.<init>(LdapCtx.java:347)
~[?:1.8.0_432]

        at
com.sun.jndi.ldap.LdapCtxFactory.getLdapCtxFromUrl(LdapCtxFactory.java:229)
~[?:1.8.0_432]

        at
com.sun.jndi.ldap.LdapCtxFactory.getUsingURL(LdapCtxFactory.java:189)
~[?:1.8.0_432]

        at
com.sun.jndi.ldap.LdapCtxFactory.getUsingURLs(LdapCtxFactory.java:247)
~[?:1.8.0_432]

        at
com.sun.jndi.ldap.LdapCtxFactory.getLdapCtxInstance(LdapCtxFactory.java:154)
~[?:1.8.0_432]

        at
com.sun.jndi.ldap.LdapCtxFactory.getInitialContext(LdapCtxFactory.java:84)
~[?:1.8.0_432]

        at
javax.naming.spi.NamingManager.getInitialContext(NamingManager.java:695)
~[?:1.8.0_432]

        at
javax.naming.InitialContext.getDefaultInitCtx(InitialContext.java:313)
~[?:1.8.0_432]
```

```
        at javax.naming.InitialContext.init(InitialContext.java:244)
~[?:1.8.0_432]

        at javax.naming.InitialContext.<init>(InitialContext.java:216)
~[?:1.8.0_432]

        at
javax.naming.directory.InitialDirContext.<init>(InitialDirContext.java:101)
~[?:1.8.0_432]
```