An Oracle Technical White Paper
November 2011

Deploying Oracle Beehive with Apple iPhones and iPads

Introduction

In today's enterprise, employees expect their mobile devices to enable the same level of productivity as their computers. Every year the number of employees using mobile devices increases, putting a strain on IT departments which need to adopt new technology and develop new support infrastructures. Oracle Beehive's mobile services in combination with Apple's iPhone or iPad allow employees to achieve a high level of productivity with their mobile devices.

Oracle Beehive is an integrated collaboration server providing enterprise-class email, group calendaring, contacts, tasks, instant messaging and conferencing. Leveraging Oracle Fusion Middleware and the Oracle Database, Oracle Beehive provides advanced communication capabilities to end users – including integrated voicemail/fax and document management – while providing IT with the robust security and streamlined manageability of Oracle Beehive's modern collaboration architecture.

Oracle Beehive's mobile services and client software in combination with Apple iOS's strong support for industry standards gives users a rich out of the box experience. Oracle Beehive and Apple iPhones and iPads work together in the following ways:

- Email access using the iOS's native support for IMAP and SMTP
- Calendar and Task List access using the iOS's native support for CalDAV
- Instant Messaging using Oracle's Beehive Mobile Communicator[1] (including support or corporate directory searches)
- Documents accessible using WebDAV through the mobile Safari browser
- Mobile SMS Alerts (including use of the Beehive ASK service)

NOTE: Contacts are synchronized through Outlook (with Oracle Beehive Extensions for Outlook installed) using iTunes.

[1] Oracle Beehive Mobile Communicator is delivered in the Beehive Enterprise Collaboration Server package or WebCenter Real-Time Collaboration package. Consult the Licensing Guide or Oracle.com for more details.

Self-Service Registration and Provisioning

Historically providing mobile capabilities to an enterprise user base has involved large costs in areas of deployment, support, and administration. Enterprise's must recognize the need for active user support. Without ongoing user support the possible productivity improvements of a mobile deployment can be lost.

The initial setup of the mobile device is often the number one culprit. Oracle Beehive helps alleviate these costs and allow for effective support by providing easy self-serve user setup where software and configuration settings are deployed to the device automatically.

- Over-the-air access to the Apple App Store makes it easy to install and provision Beehive's Mobile Communicator
- Over-the-air access to an Apple iPhone XML Configuration file during device registration can be setup such that all necessary IMAP, SMTP, and CalDAV settings are provisioned automatically for the user.

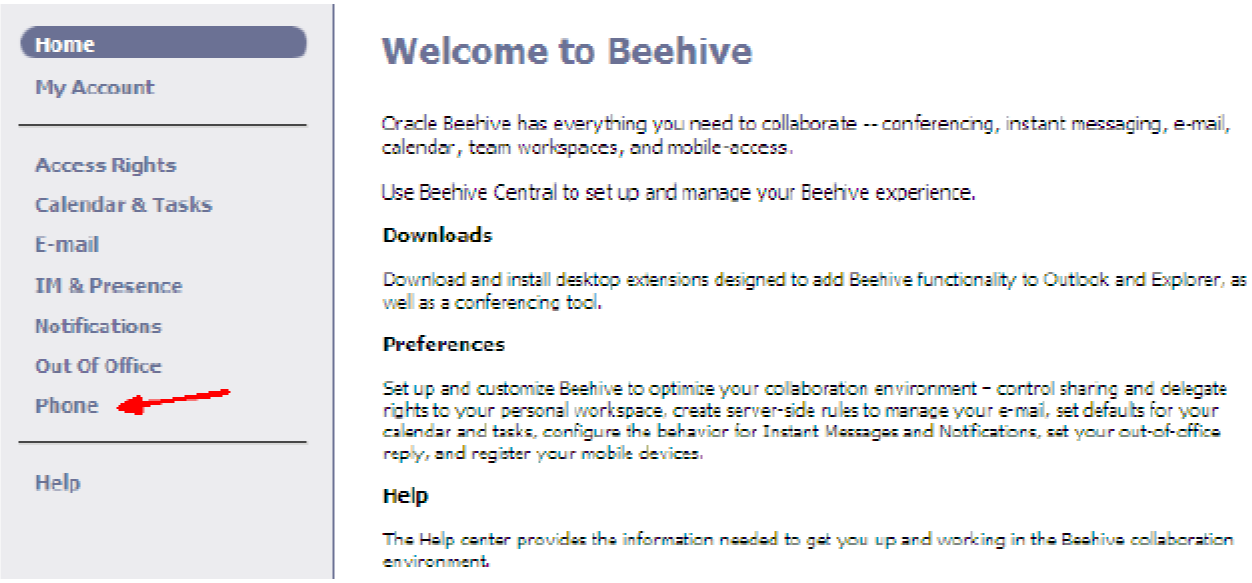
NOTE: In order for users to experience the self service registration and provisioning flows described below there are a few post installation steps that Beehive Administrators must undertake. These are described in the section which follows.

Automatic set up using SMS and Beehive Central

For enterprises which enable the Beehive SMS Delivery channel self-service registration can be initiated through Beehive Central Mobile Center.

1. Browse to: **https://<your beehive service address>/bcentral** and login

2. Select the **Phone** option



Welcome to Beehive

Oracle Beehive has everything you need to collaborate -- conferencing, instant messaging, e-mail, calendar, team workspaces, and mobile-access.

Use Beehive Central to set up and manage your Beehive experience.

Downloads

Download and install desktop extensions designed to add Beehive functionality to Outlook and Explorer, as well as a conferencing tool.

Preferences

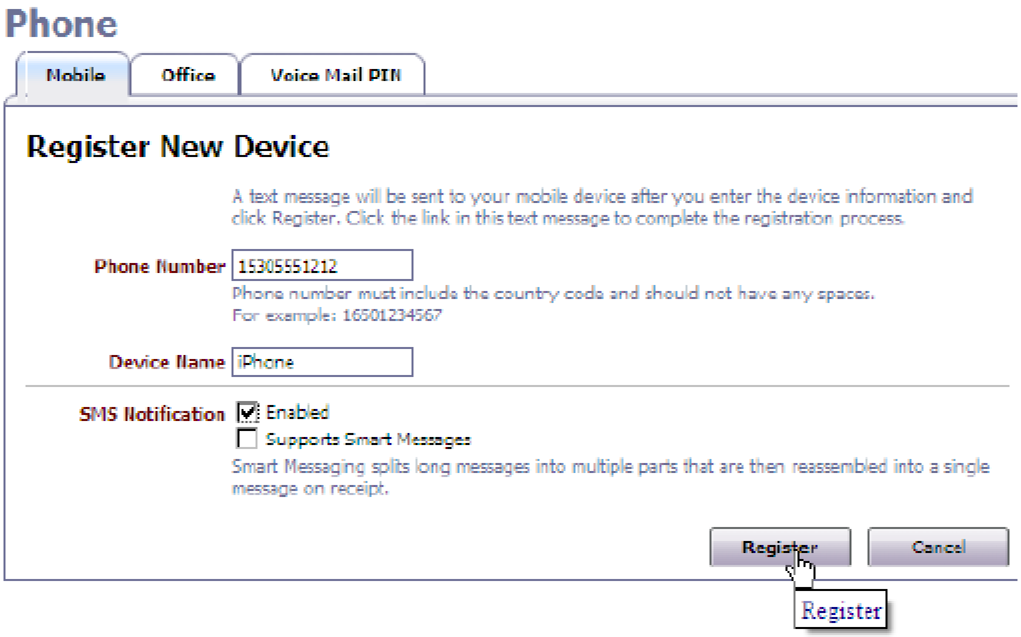
Set up and customize Beehive to optimize your collaboration environment – control sharing and delegate rights to your personal workspace, create server-side rules to manage your e-mail, set defaults for your calendar and tasks, configure the behavior for Instant Messages and Notifications, set your out-of-office reply, and register your mobile devices.

Help

The Help center provides the information needed to get you up and working in the Beehive collaboration environment.

3. Select the **New** button.

4. Enter their device phone number including country code, a name for this device such as "iPhone"



Register New Device

A text message will be sent to your mobile device after you enter the device information and click Register. Click the link in this text message to complete the registration process.

Phone Number: 15305551212

Phone number must include the country code and should not have any spaces. For example: 16501234567

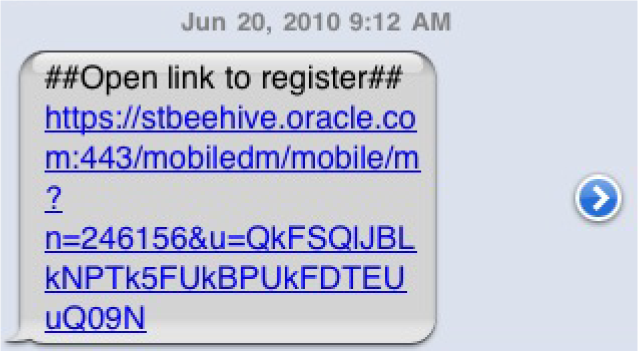
Device Name: iPhone

SMS Notification: ☑ Enabled
☐ Supports Smart Messages

Smart Messaging splits long messages into multiple parts that are then reassembled into a single message on receipt.

5. Select **Register**

6. You should shortly thereafter receive an SMS message on the device. You then need to tap the link in the SMS message which will open a browser session on the device.

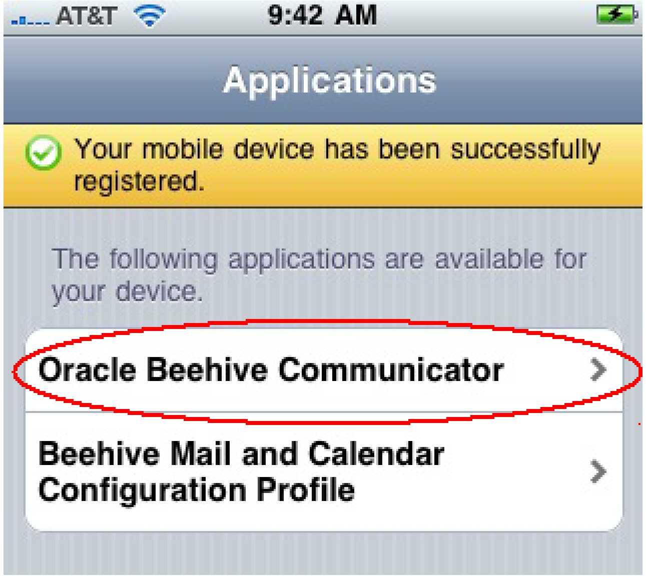


Jun 20, 2010 9:12 AM

##Open link to register## https://stbeehive.oracle.com:443/mobiledm/mobile/m?n=246156&u=QkFSQlJBLkNPTk5FUkBPUkFDTEUuQ09N

7. **Login**

8. You will see a confirmation that your device has been successfully registered.



AT&T
9:42 AM
Applications

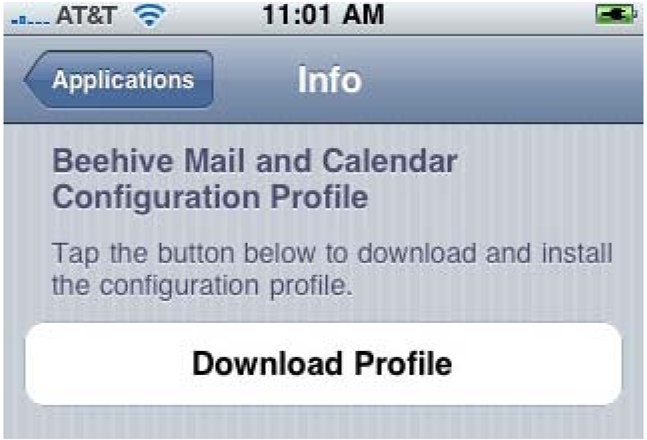
Your mobile device has been successfully registered.

The following applications are available for your device.

Oracle Beehive Communicator
Beehive Mail and Calendar Configuration Profile

9. To configure Email and Calendar access tap **Oracle Beehive Mail and Calendar Configuration Profile**.

10. Tap the **Download Profile** button

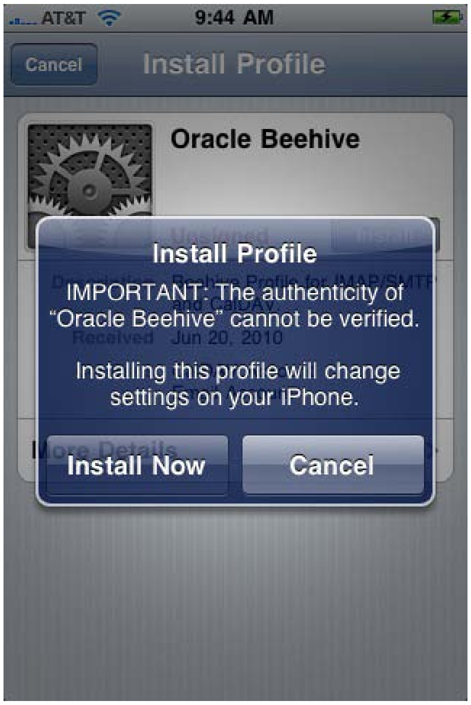


Beehive Mail and Calendar Configuration Profile

Tap the button below to download and install the configuration profile.

11. Tap **Install** to install the Oracle Beehive profile

12. Tap **Install Now**



Install Profile

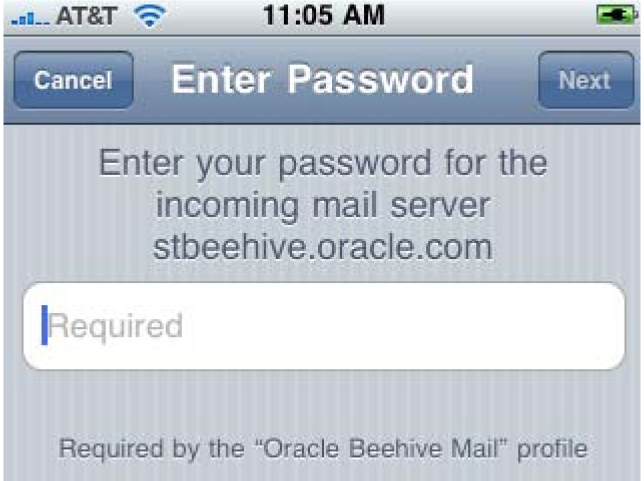
IMPORTANT: The authenticity of “Oracle Beehive” cannot be verified.

Installing this profile will change settings on your iPhone.

13. If your device has a 4 digit security passcode you will be prompted to enter the passcode

14. The profile will begin installation

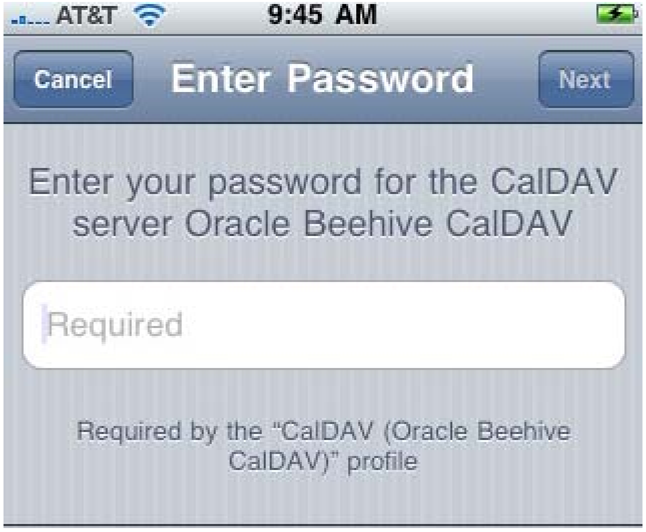
15. You will need to enter your password when prompted for email (IMAP/SMTP) and then tap the **Next** box in the upper right corner



Enter your password for the incoming mail server stbeehive.oracle.com

Required by the "Oracle Beehive Mail" profile

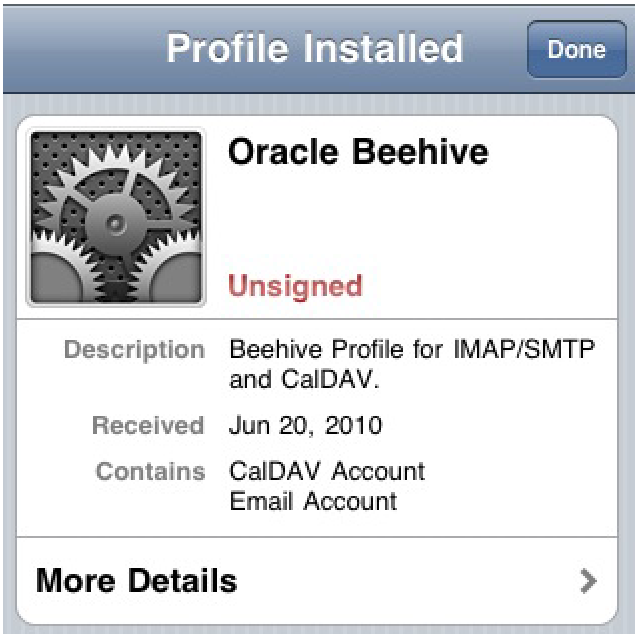
16. This will need to be repeated for Calendar Access (CalDAV).



Enter your password for the CalDAV server Oracle Beehive CalDAV

Required by the "CalDAV (Oracle Beehive CalDAV)" profile

17. You will receive a prompt **Profile Installed**. You then need to tap **Done** in the upper right corner.



Profile Installed

Oracle Beehive

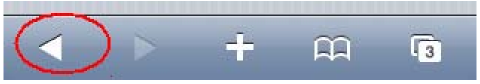
Unsigned

Description Beehive Profile for IMAP/SMTP and CalDAV.

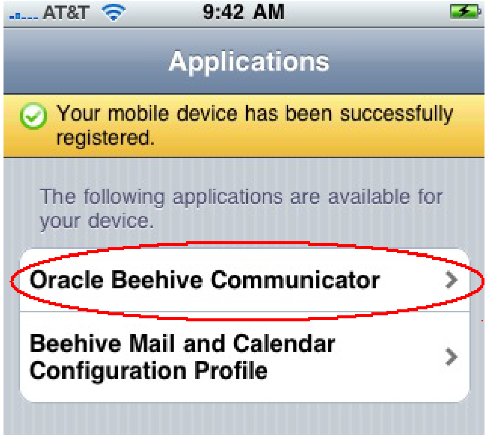
Received Jun 20, 2010

Contains CalDAV Account
Email Account

18. Return to Safari and tap the back arrow



19. To install the **Beehive Mobile Communicator** you then need to tap **Oracle Beehive Communicator**.

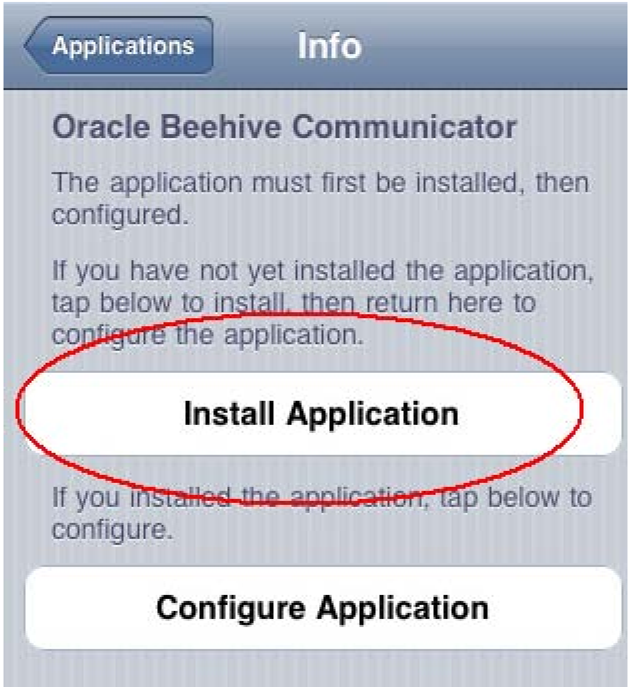

AT&T
9:42 AM
Oracle Beehive Communicator
Beehive Mail and Calendar Configuration Profile

Applications

Your mobile device has been successfully registered.

The following applications are available for your device.

20. Tap the **Install Application** link. This will launch the App Store where you can download the **Oracle Beehive Mobile Communicator** application



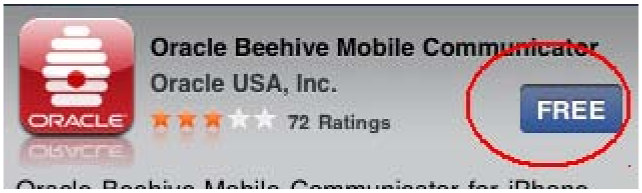
Oracle Beehive Communicator

The application must first be installed, then configured.

If you have not yet installed the application, tap below to install, then return here to configure the application.

If you installed the application, tap below to configure.

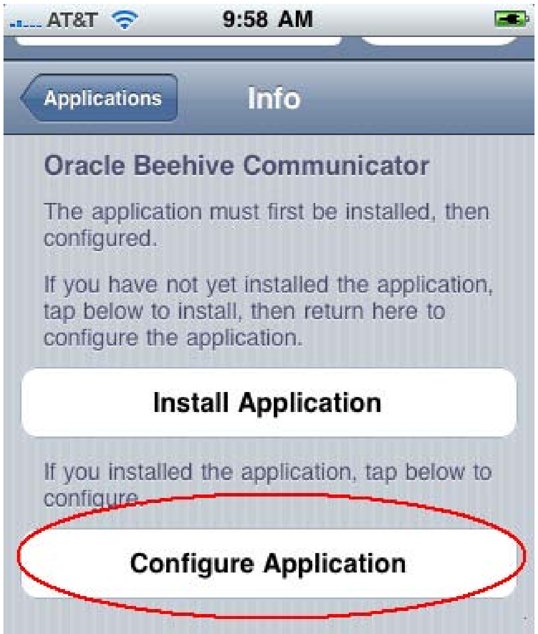
21. Tap the **Free** box and then tap **Install** and then enter your iTunes password



Oracle Beehive Mobile Communicator
Oracle USA, Inc.
★★★☆☆ 72 Ratings

Oracle Beehive Mobile Communicator for iPhone

22. Return to Safari to configure the Beehive Communicator. Tap **Configure Application**



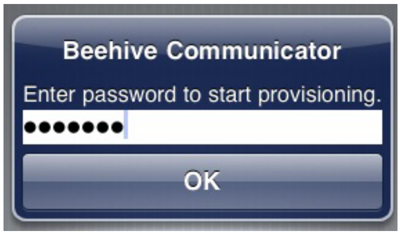
Oracle Beehive Communicator

The application must first be installed, then configured.

If you have not yet installed the application, tap below to install, then return here to configure the application.

If you installed the application, tap below to configure.

23. Enter your password and select **OK**



Beehive Communicator

Enter password to start provisioning.

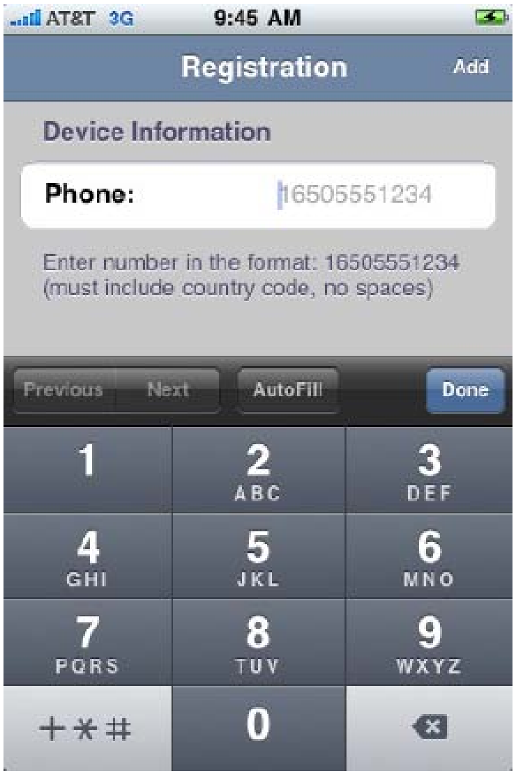
24. Provisioning will begin

Automatic set up without SMS

For Enterprises who choose not to enable the Beehive SMS Delivery channel this same type of self service registration flow can still be initiated by directing end users to browse directly to Beehive's mobile device management interface from their iPhone.

1. Browse to: **https://<your beehive service address>/mobiledm/** and login

2. Provide your mobile device number.



Registration

Device Information

Phone: 16505551234

Enter number in the format: 16505551234 (must include country code, no spaces)

3. Following this the flow will be the same as described earlier.

NOTE: Regardless of if an enterprise chooses to enable the Beehive SMS Delivery channel this method of self service registration can always be used by iPad users since iPad's do not have a mobile phone number and hence cannot receive SMS messages. The iPad user can enter a name for their device rather than a phone number in the screen above and the subsequent flow will be the same.

Post Installation Setup

As noted earlier, in order for users to experience the functionality and the self service registration and provisioning flows described in the previous sections there are a few post installation steps that Beehive Administrators must undertake.

Enabling SMS

In order to allow users to register their mobile device through Beehive Central Beehive's SMS Delivery channel must be configured and enabled.

The SMS delivery channel is configured by default to use SMPP (Short Message Peer-to-Peer). It will not be able to deliver SMS notifications until a subscription from an SMPP-compliant aggregator is secured. For a list of supported SMPP-compliant aggregators, see "Oracle Beehive Mobility Data Sheet" on the Oracle Technology Network website, at the following URL:

http://www.oracle.com/technology/products/beehive/pdf/oracle%20beehive%20mobility%20data%20sheet.pdf

Once you have received an SMS subscription, you must make the SMS delivery channel aware of your credentials and enable the delivery channel.

To configure SMS with SMPP, perform the following steps:

1. Set the Notification Delivery Service to SMPP mode:

beectl> modify_property --component _NotificationDeliveryService:SmsSettings --name SmsMode --value SMPP

2. Update the Notification Delivery Service with the URL, system ID, and password for your SMS subscription:

beectl> modify_property --component _SmppDeliveryService --name SmppServiceUrl --value <service url>

beectl> modify_property --component _SmppDeliveryService --name SmppSystemID --value <system id>

beectl> modify_secure_property --component _SmppDeliveryService --name SmppPassword -value <password>

3. If you are using the Clickatell Gateway, you must also set the SmppSystemType. The value is your assigned ID for the SMPP configuration with Clickatell via the Web interface:

beectl> modify_secure_property --component _SmppDeliveryService --name SmppSystemType -value <assigned ID>

4. Activate your proposed configuration using the beectl activate_configuration command:

beectl> activate_configuration

Enabling ASK

The Beehive Mobile Communicator and the ability for users to send SMS requests to the ASK Service require the enablement of actionable notifications

To enable actionable notifications, perform the following procedure:

1. Create a user account that will be used to receive notification responses from users. For example:

beectl> add_user --given_name NotificationAdmin --family_name NotificationAdmin --login_id NotificationAdmin --login_password <password> --address business_1:mailto:NotificationAdmin@example.com --address business_1:im:NotificationAdmin@example.com --scope <enterprise identifier>

In this example, the user is called NotificationAdmin, but you can use any name. You can also create this account using Oracle Beekeeper.

Note: If you are synchronizing the User Directory with an external, LDAP-based directory, you must create this account in your external directory with e-mail and instant message addresses, just like creating any other user account. Make sure the account is subsequently synchronized to the Oracle Beehive User Directory.

2. Use the beectl list_users command to get the EID of the user you just created. For example:

beectl> list_users --user loginid=NotificationAdmin --entity_format id

Make a note of the EID included in the output from this command.

3. Set a property of the Notification Delivery Service using the EID of the new user account you just created, with the beectl modify_property command:

beectl> modify_property --component _NotificationDeliveryService:ActionAskSetings --name ActionableNotificationUser --value <eid of user>

4. Activate your proposed configuration using the beectl activate_configuration command:

beectl> activate_configuration

Deploying an iPhone Configuration File

Over-the-air access to an Apple iPhone XML Configuration file during device registration can be setup such that all necessary IMAP, SMTP, and CalDAV settings are provisioned automatically for the user however this file must be generated using the Apple iPhone Configuration Utility (iPCU) and then placed where Beehive can access it.

The iPhone Configuration Utility (iPCU) lets you easily create, maintain, encrypt, and install configuration profiles, track and install provisioning profiles and authorized applications, and capture device information including console logs.

Configuration profiles are XML files that contain device security policies, VPN configuration information, Wi-Fi settings, APN settings, mail and calendar settings, and certificates that permit iPhone and iPod touch to work with your enterprise systems.

In order for Beehive's device registration process to deliver an iPhone Configuration file to user's iPhones it needs to first be generated using Apple's iPCU and then uploaded into Beehive.

1. Generate a Configuration file. Be sure to include settings for IMAP, SMTP, and CalDAV.

2. In order to make the generated XML file generic such that it can use for all beehive users you then need to edit the XML and replace the hard coded values with tokens that Beehive can replace at runtime when a user requests to upload the file.

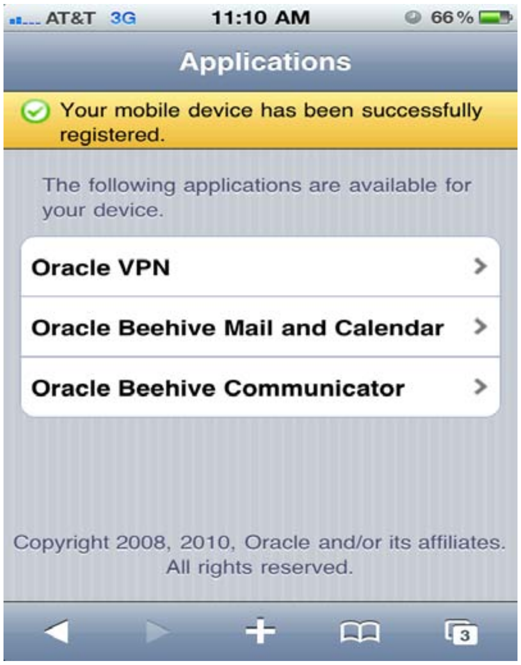
NOTE: Doing so requires generating the profile with a security option of none. If you wish to sign your profile you can enter explicit values for each value but you will need to leave the user name blank and the user will be asked for it (as they are asked for their password) when they download the profile.

The following sample samples shows the end result with the tokens highlighted in bold.:

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE plist PUBLIC "-//Apple//DTD PLIST 1.0//EN"
"http://www.apple.com/DTDs/PropertyList-1.0.dtd">
<plist version="1.0">
<dict>
        <key>PayloadContent</key>
        <array>
                <dict>
                        <key>EmailAccountDescription</key>
                        <string>Oracle Beehive Mail</string>
                        <key>EmailAccountName</key>
                        <string>$$DISPLAY_NAME$$</string>
                        <key>EmailAccountType</key>
                        <string>EmailTypeIMAP</string>
                        <key>EmailAddress</key>
                        <string>$$EMAIL_ADDRESS$$</string>
                        <key>IncomingMailServerAuthentication</key>
                        <string>EmailAuthPassword</string>
                        <key>IncomingMailServerHostName</key>
                        <string>$$IMAP_ADDRESS$$</string>
                        <key>IncomingMailServerPortNumber</key>
                        <real>993</real>
                        <key>IncomingMailServerUseSSL</key>
                        <true/>
                        <key>IncomingMailServerUsername</key>
                        <string>$$EMAIL_ADDRESS$$</string>
                        <key>OutgoingMailServerAuthentication</key>
                        <string>EmailAuthPassword</string>
                        <key>OutgoingMailServerHostName</key>
                        <string>$$SMTP_ADDRESS$$</string>
                        <key>OutgoingMailServerPortNumber</key>
                        <real>465</real>
                        <key>OutgoingMailServerUseSSL</key>
                        <true/>
                        <key>OutgoingMailServerUsername</key>
                        <string>$$EMAIL_ADDRESS$$</string>
                        <key>OutgoingPasswordSameAsIncomingPassword</key>
                        <true/>
                        <key>PayloadDescription</key>
                        <string>Configures email account.</string>
                        <key>PayloadDisplayName</key>
                        <string>Oracle Beehive Mail</string>
                        <key>PayloadIdentifier</key>
                        <string>com.oracle.beehive.email</string>
                        <key>PayloadOrganization</key>
                        <string></string>
                        <key>PayloadType</key>
                        <string>com.apple.mail.managed</string>
                        <key>PayloadUUID</key>
                        <string>74753AFC-0702-4174-A3CA-621A603D2AF2</string>
                        <key>PayloadVersion</key>
                        <integer>1</integer>
                </dict>
                <dict>
                        <key>CalDAVAccountDescription</key>
                        <string>Oracle Beehive CalDAV</string>
                        <key>CalDAVHostName</key>
                        <string>$$BEEHIVE_SERVER_ADDRESS$$</string>
                        <key>CalDAVPort</key>
                        <integer>443</integer>
                        <key>CalDAVPrincipalURL</key>

        <string>$$BEEHIVE_URL$$caldav/$$ENPR_NAME_URLENC$$/principals/individuals/
$$EMAIL_ADDRESS$$</string>
                        <key>CalDAVUseSSL</key>
                        <true/>
                        <key>CalDAVUsername</key>
                        <string>$$USERNAME$$</string>
                        <key>PayloadDescription</key>
                        <string>Configures CalDAV account.</string>
                        <key>PayloadDisplayName</key>
                        <string>CalDAV (Oracle Beehive CalDAV)</string>
                        <key>PayloadIdentifier</key>
                        <string>com.oracle.beehive.caldav</string>
                        <key>PayloadOrganization</key>
                        <string></string>
                        <key>PayloadType</key>
                        <string>com.apple.caldav.account</string>
                        <key>PayloadUUID</key>
                        <string>40A76E20-A6DE-4867-845C-549BBD287277</string>
                        <key>PayloadVersion</key>
                        <integer>1</integer>
                </dict>
        </array>
        <key>PayloadDescription</key>
        <string>Beehive Profile for IMAP/SMTP and CalDAV.</string>
        <key>PayloadDisplayName</key>
        <string>Oracle Beehive</string>
        <key>PayloadIdentifier</key>
        <string>com.oracle.beehive</string>
        <key>PayloadOrganization</key>
        <string></string>
        <key>PayloadRemovalDisallowed</key>
        <false/>
        <key>PayloadType</key>
        <string>Configuration</string>
        <key>PayloadUUID</key>
        <string>B24A2C42-277E-4D46-872E-33917300906C</string>
        <key>PayloadVersion</key>
        <integer>1</integer>
</dict>
</plist>
```

NOTE: In addition to Email and Calendar settings an Admin can include any other settings important for their deployment. When the user registers their device with Beehive and uploads the configuration file they will get the email and calendar settings as well as any additional settings. This can be done as part of one configuration profile or you can upload multiple profiles.



Applications

Your mobile device has been successfully registered.

The following applications are available for your device.

Oracle VPN

Oracle Beehive Mail and Calendar

Oracle Beehive Communicator

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3. To upload the configuration file to Beehive you need to create a ZIP file that contains the edited configuration file as well as a file called metadata.xml which should contain the following:

```
<?xml version="1.0" encoding="UTF-8"?>
<application>
        <property>
                <name> Beehive Mobile PIM Bootstrap </name>
                 <display_name> Beehive Mail and Calendar Configuration Profile
</display_name>
                <description> Oracle Beehive iPhone Configuration Profile for
IMAP/SMTP and CalDAV. </description>
                <os> iphone  </os>
                <processor>all </processor>
                <deviceclass> apple </deviceclass>
                <language> all </language>
                <version> 2.0.0.0.0 </version>
                <versionnumber> 20 </versionnumber>
                <patchsetnumber> 0 </patchsetnumber>
                <vendor> Oracle </vendor>
                <application_type>BOOTSTRAP</application_type>
        </property>
        <modules>
                <module>
                        <name>iphone_system.mobileconfig</name>
                        <src> . </src>
                        <dest> . </dest>
                        <contenttype>application/x-apple-aspen-config</contenttype>
                </module>
        </modules>
        <configuration>
                <param name="config_file" value="iphone_system.mobileconfig"/>
                <param name="download_mode" value="file" />
                <param name="replace_tokens" value="true" />
        </configuration>
</application>
```

NOTE: The display name in the sample above can be customized to the needs of the deployment. Also in this example the configuration file is referred to as `iphone_system.mobileconfig`, be sure to save the config file with this name or make sure to use your own name in the metadata.xml file.

4. It is now a simple matter of uploading the configuration file into Beehive:

beectl upload_client_application –file iphoneconfig.zip

With the configuration file now in place Beehive will automatically start offering it to users who register an iPhone.

Enforcing a Device Passcode

If your users' device become lost or stolen your Beehive data could potentially be at risk if your users do not have a lock code activated on their device. The iPhone Configuration Utility can be used to set a policy to require passcode on the device:

With this in place users must enter a passcode before using the device. This is easily done

1. Tap **Settings**

2. Tap **General**

3. Tap **Auto-Lock** and select the preferred interval

4. Tap **General**

5. Tap **Passcode Lock**

6. Tap **Turn Passcode On**

7. Set the 4 digit passcode (for iOS4 devices you can set an alpha-numeric passcode)

8. Re-enter the passcode

9. Enable **Erase Data** feature. This will automatically erase the data on your device after 10 failed passcode attempts

Ports

In the sample configuration file shown above ports 993 (incoming email), 465 (outgoing email), and 443 (CalDAV over HTTPS), were used. In addition the Beehive Mobile Communicator uses the Beehive secure client port known as BTPS which is usually set to 5224. In order for iPhone users to have access to the Beehive functionality described above these ports must be exposed outside the Enterprise firewall.

NOTE: In cases where exposing such ports outside the firewall is not possible you may want to consider providing VPN access to your iPhone users. The iPhone Configuration Utility also includes support for Cisco AnyConnect and Juniper Networks SSL VPN clients.

Requirements

The solution described in this white paper requires the following:

- Oracle Beehive 2.0.1.2+ (if your users are using iOS5 then Oracle Beehive 2.0.1.6 is required)
- Apple iPhones (3, 3G, 4, 4s), Apple iPads (1,2)

References

For information on Oracle Beehive and its mobile services,
visit http://www.oracle.com/technetwork/middleware/beehive/overview/index.html

For information on configuring ports used by Oracle Beehive
visit http://download.oracle.com/docs/cd/E16671_01/bh.200/e16641/post_installation.htm#configure_ports_1024

For information on enabling the SMS delivery channel and the ASK service
visit http://download.oracle.com/docs/cd/E16671_01/bh.200/e16648/subscriptionsnotifications.htm#sthref516

For information on how to integrate iOS devices with your enterprise systems,
visit http://www.apple.com/support/iphone/enterprise/.

Conclusion

To ensure employee productivity, enterprises require a well-designed mobile device strategy. Oracle Beehive's mobile services paired with Apple iPhones and iPads can be a key part of such a strategy, allowing for secure and manageable mobile collaboration.

For more information about Oracle Beehive, please visit oracle.com/beehive or call +1.800.ORACLE1 to speak to an Oracle representative.

ORACLE

Deploying Oracle Beehive with Apple iPhones
November 2011

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