Deploying iPhone and iPad
Standards-Based Services

With support for the IMAP mail protocol, LDAP directory services, and CalDAV calendaring and CardDAV contacts protocols, iOS can integrate with just about any standards-based mail, calendar, and contacts environment. And if your network environment is configured to require user authentication and SSL, iPhone and iPad provide a secure approach to accessing standards-based corporate email, calendar, tasks, and contacts.

In a typical deployment, iPhone and iPad establish direct access to IMAP and SMTP mail servers to receive and send email over the air, and can also wirelessly sync notes with IMAP-based servers. iOS devices can connect to your company's LDAPv3 corporate directories, giving users access to corporate contacts in the Mail, Contacts, and Messages applications. Synchronization with your CalDAV server allows users to wirelessly create and accept calendar invitations, receive calendar updates, and sync tasks with the Reminders app. And CardDAV support allows your users to maintain a set of contacts synced with your CardDAV server using the vCard format. All network servers can be located within a DMZ subnetwork, behind a corporate firewall, or both. With SSL, iOS supports 128-bit encryption and X.509 root certificates issued by the major certificate authorities.

Common ports

- IMAP/SSL: 993
- SMTP/SSL: 587
- LDAP/SSL: 636
- CalDAV/SSL: 8443, 443
- CardDAV/SSL: 8843, 443

IMAP or POP-enabled mail solutions
iOS supports industry-standard IMAP4- and POP3-enabled mail servers on a range of server platforms, including Windows, UNIX, Linux, and Mac OS X.

CalDAV and CardDAV standards
iOS supports the CalDAV calendaring and CardDAV contacts protocols. Both protocols have been standardized by the IETF. More information can be found through the CalConnect consortium at http://caldav.calconnect.org/ and http://carddav.calconnect.org/.

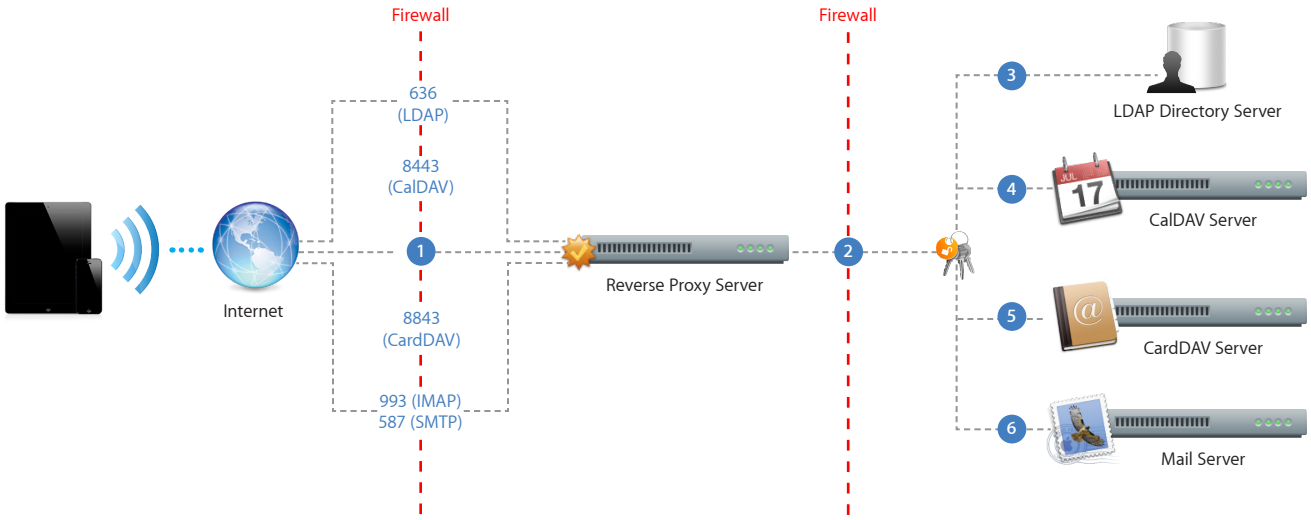
Network Setup

Your IT or network administrator will need to complete these key steps to enable access from iPhone and iPad to IMAP, LDAP, CalDAV, and CardDAV services:

- Open the appropriate ports on the firewall. Common ports include 993 for IMAP mail, 587 for SMTP mail, 636 for LDAP directory services, 8443 for CalDAV calendaring, and 8843 for CardDAV contacts. It's also recommended that communication between your proxy server and your back-end IMAP, LDAP, CalDAV, and CardDAV servers be set to use SSL and that digital certificates on your network servers be signed by a trusted certificate authority (CA) such as VeriSign. This important step ensures that iPhone and iPad recognize your proxy server as a trusted entity within your corporate infrastructure.
- For outbound SMTP email, port 587, 465, or 25 must be opened to allow email to be sent. iOS automatically checks for port 587, then 465, and then 25. Port 587 is the most reliable, secure port because it requires user authentication. Port 25 does not require authentication, and some ISPs block this port by default to prevent spam.

Deployment Scenario

This example shows how iPhone and iPad connect to a typical IMAP, LDAP, CalDAV, and CardDAV deployment.



1. iPhone and iPad request access to network services over the designated ports.
2. Depending on the service, users must authenticate either with the reverse proxy or directly with the server to obtain access to corporate data. In all cases, connections are relayed by the reverse proxy, which functions as a secure gateway, typically behind the company's Internet firewall. Once authenticated, users can access their corporate data on the back-end servers.
3. iPhone and iPad provide lookup services on LDAP directories, giving users the ability to search for contacts and other address book information on the LDAP server.
4. For CalDAV calendars, users can access and update calendars.
5. CardDAV contacts are stored on the server and can also be accessed locally on iPhone and iPad. Changes to fields in CardDAV contacts are synced back to the CardDAV server.
6. For IMAP mail services, existing and new messages can be read on iPhone and iPad through the proxy connection with the mail server. Outgoing mail is sent to the SMTP server, with copies placed in the user's Sent folder.