



CHAPTER 1

Planning to Install Cisco Unified Personal Communicator

December 2008

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Note

For details about new features in this release, see the “New and Changed Information” section in the release notes:

http://www.cisco.com/en/US/products/ps6844/prod_release_notes_list.html

About Interactions With Servers and Applications

Cisco Unified Personal Communicator interacts with these servers and applications as shown in [Figure 1-1 on page 1-3](#):

- Cisco Unified Communications Manager call-processing system (formerly known as Cisco Unified CallManager) provides telephony features, video, and voice-over-IP capabilities to Cisco Unified Personal Communicator. Through the interaction with Cisco Unified Communications Manager, Cisco Unified Personal Communicator offers integrated soft-phone capabilities (audio and video) and computer telephony interface (CTI) control of the physical Cisco Unified IP Phone. You administer Cisco Unified Personal Communicator as a phone device by using the Cisco Unified Communications Manager Administration Phone Configuration window.
- Cisco Unified Presence delivers a Session Initiation Protocol (SIP) presence engine and a SIP proxy server functionality to Cisco Unified Personal Communicator. The presence engine provides Cisco Unified Personal Communicator with the infrastructure for user and device status information (for example, available, away, do not disturb) by using SIP Instant Messaging and Presence Leveraging Extensions (SIMPLE).

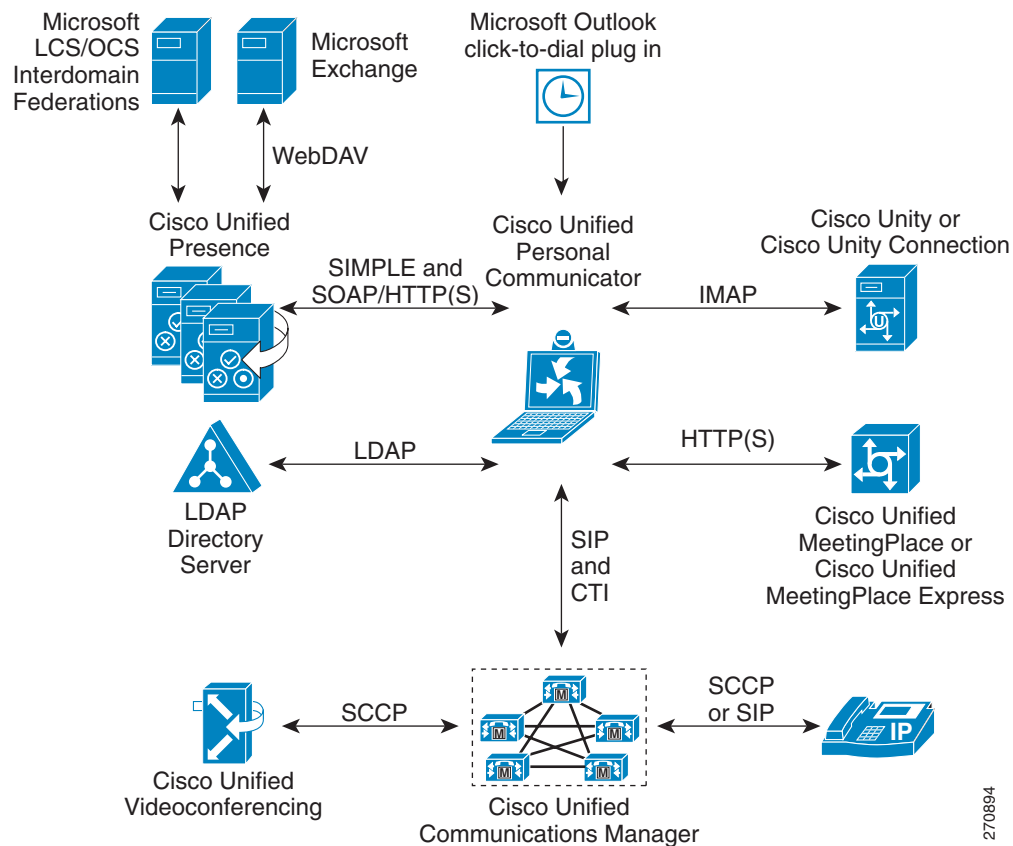
The presence engine stores information about the preferred communication method (instant message, e-mail, voice, video) and the contact list for each user. Cisco Unified Presence also maintains login authentication for, and provides configuration information to, Cisco Unified Personal Communicator by using Simple Object Access Protocol (SOAP) over HTTP and HTTPS.

The proxy server provides both registration and routing support for its clients, all of which are SIP-based. The Cisco Unified Personal Communicator sends SIP messages to and receives SIP messages from this proxy server. These SIP messages are for presence information and database change notifications. Cisco Unified Personal Communicator also sends SIP messages (via the proxy) to other Cisco Unified Personal Communicator clients for instant messaging.

- Corporate Lightweight Directory Access Protocol (LDAP) version 3 directories interact with Cisco Unified Personal Communicator to provide additional contact information (first name, last name, phone numbers, and so forth) through directory searches for each contact in the contact list.
- Cisco Unity Connection or Cisco Unity enable users to effectively manage communications messages (view, play back, sort, and delete) from within the Cisco Unified Personal Communicator application.
- Web conferencing servers:
 - Cisco Unified MeetingPlace Express provides access to a private, reservationless, web conferencing sessions for users who are in a Cisco Unified Personal Communicator conversation. Users can start a web conferencing session at any time to share content, such as presentations, and to facilitate collaboration with others. Cisco Unified MeetingPlace Express does not reserve voice ports for web meetings initiated through Cisco Unified Personal Communicator.
 - Cisco Unified MeetingPlace Express VT extends Cisco Unified Communications Manager video telephony capabilities. Users can add video to existing voice communication, move from point-to-point to multiparty voice and video calls, and can add web conferencing to their voice and video communications.
 - Cisco Unified MeetingPlace provides a more extensive feature set (such as scheduled and reservationless rich-media conferencing) and allows more concurrent users than Cisco Unified MeetingPlace Express. With this product, a Cisco Unified Personal Communicator user can start a web conferencing session or a video conferencing session.
- Cisco Unified Videoconferencing and Cisco Unified MeetingPlace Express VT provide audio and video support for merged conference calls (three or more parties) placed through Cisco Unified Personal Communicator.

For information about supported releases for the applications and servers that interact with Cisco Unified Personal Communicator, see the release notes:

http://www.cisco.com/en/US/products/ps6844/prod_release_notes_list.html

Figure 1-1 Cisco Unified Personal Communicator Interactions with Network Servers

- [How Cisco Unified Personal Communicator Interacts With Servers at Startup, page 1-3](#)
- [Chapter 2, “Configuring Required Servers for Cisco Unified Personal Communicator”](#)

How Cisco Unified Personal Communicator Interacts With Servers at Startup

When Cisco Unified Personal Communicator starts, the application performs the following operations:

1. It makes a secure (encrypted) connection to Cisco Unified Presence and downloads the contact list, network settings, user settings, and portable user preferences for each user.
2. Once the user logs in to the Cisco Unified Presence home node, Cisco Unified Personal Communicator uses the TFTP server address retrieved from Cisco Unified Presence to download the `UPCusername.cnf.xml` configuration file from Cisco Unified Communications Manager. For details about the configuration file, see the [“Specifying TFTP Server Addresses”](#) section on page 2-20.
3. The application registers to receive presence information from Cisco Unified Presence. After it is registered, the application subscribes to receive live presence information for each user in the contact list.

4. If soft-phone mode is enabled for the user, the application starts the soft-phone module and registers with Cisco Unified Communications Manager for call processing.
If configured, Cisco Unified Personal Communicator establishes a connection with Cisco Unified Communications Manager for desk-phone control. Otherwise, if phone-association mode is enabled for the user through the extension mobility feature in Cisco Unified Communications Manager and if the user did not specify a preferred device in Cisco Unified Personal Communicator, Cisco Unified Personal Communicator chooses the first CTI-enabled phone that is associated to the user in Cisco Unified Communications Manager.
5. The application connects to the voice-mail server (if deployed), provides the credentials for the user, and retrieves the headers of any currently stored voice-mail messages. Cisco Unified Personal Communicator stores the call history locally and records missed calls only if it is running.
6. The application attempts to look up directory information for call records, contact information for each contact in the contact list, and for the voice-mail messages that have been retrieved. The application presents the directory results to the user in the Recent pane.
7. When all directory searches are complete, the application stores the contact information for presence and voice mail in memory.

Related Topics

- [Network Settings That Are Retrieved from Servers, page 1-4](#)
- [User Settings That Are Retrieved from Servers, page 1-5](#)
- [Portable User Preferences That Are Stored on Cisco Unified Presence, page 1-5](#)

Network Settings That Are Retrieved from Servers

You must configure network settings so that users can access network resources. You configure the network settings in Cisco Unified Presence Administration unless noted otherwise. Cisco Unified Personal Communicator retrieves the following settings:

- List of servers (Cisco Unified Communications Manager, LDAP, voice-mail servers, and web conferencing servers) and their addresses, ports, and transport types
- LDAP schema mapping (data definition for the directory)
- LDAP user common name (cn) attribute (for limiting the LDAP search to names)
- LDAP search base (the location where all LDAP users exist) and recursive search flag (specifies whether to perform a recursive search of the directory starting at the search base)
- Bind anonymously to LDAP (specifies whether to use the credentials of the user to log in to this LDAP server or to use an anonymous login for read-only access)
- Presence domain name (used for SIP registration in the form of *user@domainname*)
- Application dialing rules and directory lookup dialing rules (configured through the Cisco Unified Communications Manager Administration)
- Voice-mail pilot number (redirects an incoming call to voice mail)

These settings are read only; Cisco Unified Personal Communicator cannot modify them and write them to the server.

Related Topics

- [How Cisco Unified Personal Communicator Interacts With Servers at Startup, page 1-3](#)
- [User Settings That Are Retrieved from Servers, page 1-5](#)
- [Portable User Preferences That Are Stored on Cisco Unified Presence, page 1-5](#)
- [Chapter 2, “Configuring Required Servers for Cisco Unified Personal Communicator”](#)

User Settings That Are Retrieved from Servers

You configure certain settings specific to each user in Cisco Unified Presence Administration and in Cisco Unified Communications Manager Administration. Similar to the network settings, the application retrieves the user settings from the server, but it can neither modify the configuration nor write it to the server.

The application retrieves the following user settings:

- The phone line or number to control when the application operates in CTI mode
- Licensing information, including what capabilities are enabled

Related Topics

- [How Cisco Unified Personal Communicator Interacts With Servers at Startup, page 1-3](#)
- [Network Settings That Are Retrieved from Servers, page 1-4](#)
- [Portable User Preferences That Are Stored on Cisco Unified Presence, page 1-5](#)

Portable User Preferences That Are Stored on Cisco Unified Presence

The application stores portable user-preference information on Cisco Unified Presence so that the user can log in from any computer and retain various application settings. The application writes preference information to, and retrieves preference information from, the server. This preference information includes:

- The LDAP directory username and password (required only if non-anonymous bind is configured in Cisco Unified Presence Administration)
- Cisco Unified Presence digest password (not visible in the web administration but it is synchronized from Cisco Unified Communications Manager user configuration)
- Username and password for voice-mail server access
- Username and password for conferencing server access
- User preference information configured through the Preferences window in Cisco Unified Personal Communicator

The contact list is stored on and downloaded from Cisco Unified Presence. The recent communication records (missed, received, and sent calls, but *not* voice mail) are stored on the file system of the client computer and are not stored on Cisco Unified Presence.

Preference information is stored at this location:

- For Windows XP: *drive*:\Documents and Settings*username*\Application Data\Cisco\Unified Personal Communicator
- For Windows Vista: *drive*:\Users*username*\AppData\Local\Cisco\Unified Personal Communicator

where *drive* is the local hard drive and *username* is the login name of the logged in user.

All data in the Application Data directory is designed to follow the user around if you configure the Windows Roaming Profile option for the user. If the Windows user profile type is roaming, these settings will apply whenever the user logs in under the same Windows account on any other computer. For details about roaming profiles, see the Microsoft website.

Preference information for Mac OS systems is stored at this location, where ~ is the home folder for the user:

- ~/Library/Preferences/Cisco/UnifiedPersonalCommunicator/
- ~/Library/Preferences/com.cisco.CiscoUPC.plist

Related Topics

- [How Cisco Unified Personal Communicator Interacts With Servers at Startup, page 1-3](#)
- [Network Settings That Are Retrieved from Servers, page 1-4](#)
- [User Settings That Are Retrieved from Servers, page 1-5](#)

Gathering Information to Configure Servers

The table lists the information you need to gather to complete the server configuration tasks.

Procedure

Task	Where needed...
Information Needed for Cisco Unified Communications Manager Configuration	
Whether the plus character in dialed numbers is enabled or supported in your Cisco Unified Communications Manager installation	Application Dialing Rule Changes Required for Plus Dialing, page 1-10
Cisco Unified IP Phone MAC address for each user	Adding Desk Phones to the Cisco Unified Communications Manager Database, page 2-1
Directory numbers for each user	Adding Desk Phones to the Cisco Unified Communications Manager Database, page 2-1
Cisco Unified Communications Manager usernames	Adding Cisco Unified Personal Communicator as a Phone Type, page 2-5
Cisco Unified Communications Manager MAC address	How to Configure Licensing in Cisco Unified Communications Manager, page 2-13
Cisco Unified Videoconferencing MCU MAC address	Configuring Videoconferencing Resources, page 3-19
Information needed for Cisco Unified Presence Configuration	
TFTP server (primary and backup) addresses	How to Select the Proxy Listener, page 2-18
LDAP attribute mapping schema	Configuring the LDAP Attribute Map, page 2-22
LDAP server addresses	Specifying LDAP Server Names and Addresses, page 2-24

Task	Where needed...
LDAP server password	Creating LDAP Profiles, page 2-26
Computer telephony interface (CTI) gateway server addresses	Specifying CTI Gateway Server Names and Addresses, page 2-29
Voice-mail server addresses (Cisco Unity Connection or Cisco Unity)	Specifying Voice-Mail Server Names and Addresses in Cisco Unified Presence Administration, page 3-6
Web conferencing server addresses (Cisco Unified MeetingPlace Express VT, Cisco Unified MeetingPlace Express, or Cisco Unified MeetingPlace)	Specifying Conferencing Server Names and Addresses in Cisco Unified Presence Administration, page 3-17

Related Topics

- [Installing Servers, page 1-7](#)
- [Chapter 2, “Configuring Required Servers for Cisco Unified Personal Communicator”](#)
- [Chapter 3, “Configuring Recommended Servers for Cisco Unified Personal Communicator”](#)

Installing Servers

This section provides a high-level overview of the tasks that need to be completed before you deploy Cisco Unified Personal Communicator.



Note

Use care when setting usernames and passwords. Although passwords do not need to match across all servers, it is easier for users to correctly configure the Cisco Unified Personal Communicator client if they do. Users cannot change passwords from Cisco Unified Personal Communicator; instead users must follow the password change instructions specific to each server.

Procedure

Step 1 Comply with the network, server, and the client computer requirements that are described in the release notes:

http://www.cisco.com/en/US/products/ps6844/prod_release_notes_list.html

- Make sure to use the correct software release for the supported servers.
- Make sure that you read and understand the system requirements before you proceed with the installation.

Step 2 Install and configure Cisco Unified Communications Manager.

Cisco Unified Communications Manager manages the Cisco Unified IP Phones associated with Cisco Unified Personal Communicator and routes and processes calls. Cisco Unified Communications Manager provides licensing information to Cisco Unified Personal Communicator and provides controls for video conferencing when the Cisco Unified Videoconferencing Multipoint Control Unit (MCU) is installed.

Follow the system configuration overview instructions in the *Cisco Unified Communications Manager System Guide* and the instructions in the *Cisco Unified Communications Manager Administration Guide* (or in the Cisco Unified Communications Manager Administration online help).

http://www.cisco.com/en/US/products/sw/voicesw/ps556/prod_maintenance_guides_list.html

- Step 3** Install and configure the LDAP server by following the instructions that shipped with the server.
- The LDAP directory interacts with Cisco Unified Personal Communicator to provide additional contact information (first name, last name, phone numbers, and so forth) through directory searches for each contact in the contact list for a user.
- You must configure Cisco Unified Presence to interact with the LDAP server.
- Step 4** Install and configure Cisco Unified Presence.
- Cisco Unified Presence provides the client configuration and presence information to Cisco Unified Personal Communicator.
- See the Cisco Unified Presence installation and upgrade guide and the deployment guide:
- http://www.cisco.com/en/US/products/ps6837/prod_installation_guides_list.html
- http://www.cisco.com/en/US/products/ps6837/products_installation_and_configuration_guides_list.html
- Step 5** (Optional) For full functionality of Cisco Unified Personal Communicator, install and configure these products:
- Cisco Unity Connection or Cisco Unity to provide voice-mail retrieval and playback
 - See the Cisco Unity Connection install and upgrade guides, and the maintain and operate guides:

http://www.cisco.com/en/US/products/ps6509/tsd_products_support_series_home.html
 - See the Cisco Unity install and upgrade guides, and the maintain and operate guides:

http://www.cisco.com/en/US/products/sw/voicesw/ps2237/tsd_products_support_series_home.html

You must configure Cisco Unified Presence to interact with the voice-mail server.
 - Cisco Unified MeetingPlace Express VT, Cisco Unified MeetingPlace Express, or Cisco Unified MeetingPlace to provide web conferencing or voice and video conferencing
 - See the Cisco Unified MeetingPlace Express VT and the Cisco Unified MeetingPlace Express install and upgrade guides, and the maintain and operate guides:

http://www.cisco.com/en/US/products/ps6533/tsd_products_support_series_home.html
 - See the Cisco Unified MeetingPlace install and upgrade guides, and the maintain and operate guides:

http://www.cisco.com/en/US/products/sw/ps5664/ps5669/tsd_products_support_series_home.html

You must configure Cisco Unified Presence to interact with the web conferencing server.
 - Microsoft Exchange Calendar server integration with Cisco Unified Presence to include the status of meetings from the Outlook calendar into Cisco Unified Personal Communicator user availability status.

You must integrate the Exchange server with Cisco Unified Presence so that Cisco Unified Personal Communicator users can import the status of meetings from their calendars into their availability status. This means that if a user has a meeting scheduled, the meeting status is used to update the availability of the Cisco Unified Personal Communicator user. When calendar integration is enabled, meetings scheduled in the Exchange calendar impact Cisco Unified Personal Communicator user availability in these ways:

 - Scheduled meetings cause the availability status of the user to display as Busy for that time period.

- Meetings marked as Out-of-the-Office cause the availability status to display as Away for that time period.
- Meetings marked as Free or Tentative cause the availability status to display as Free for that time period.

For details about how to integrate and configure Cisco Unified Presence with Microsoft Exchange Server, see the integration note:

http://www.cisco.com/en/US/products/ps6837/products_installation_and_configuration_guides_list.html

- Microsoft Office Communications Server (OCS) or Microsoft Live Communications Server (LCS) integration with Cisco Unified Presence to provide inter-domain presence and instant messages exchange.

When you configure federations, Cisco Unified Presence users in one domain can interact with Microsoft Office Communicator (MOC) users and/or Cisco Unified Presence users in another domain to exchange presence and instant messages.

Inter-domain presence and instant messaging federations are supported in these configurations:

- Cisco Unified Personal Communicator to Cisco Unified Personal Communicator in different Cisco Unified Presence domains
Cisco Unified Personal Communicator is registered to one Cisco Unified Presence/Cisco Unified Communications Manager domain, and another Cisco Unified Personal Communicator is registered to another Cisco Unified Presence/Cisco Unified Communications Manager domain.
- Cisco Unified Personal Communicator to a deskphone controlled by MOC in different Cisco Unified Presence domains
Cisco Unified Personal Communicator is registered to one Cisco Unified Presence domain and a deskphone controlled by MOC is registered to another Cisco Unified Presence domain.
- Cisco Unified Personal Communicator to MOC device registered to OCS or LCS
Cisco Unified Personal Communicator is registered to one Cisco Unified Presence domain, and the MOC device is registered with OCS or LCS.

The result of the federation is that contact lists in Cisco Unified Personal Communicator will contain foreign and internal usernames.



Note Any external user who does not have a domain cannot be in a federated domain. There will be no presence available for this contact.

For details about how to integrate and configure Cisco Unified Presence with Microsoft OCS/LCS, see the integration note:

http://www.cisco.com/en/US/products/ps6837/products_installation_and_configuration_guides_list.html

- Cisco Unified Videoconferencing MCU for video conferencing support when Cisco Unified Personal Communicator is used in soft-phone mode

See the install and upgrade guides, and the maintain and operate guides:

http://www.cisco.com/en/US/products/hw/video/ps1870/tsd_products_support_series_home.html

You must configure Cisco Unified Communications Manager to interact with the MCU.

Step 6 Configure the servers in this procedure for use with Cisco Unified Personal Communicator.

Related Topics

- [Gathering Information to Configure Servers, page 1-6](#)
- [Chapter 2, “Configuring Required Servers for Cisco Unified Personal Communicator”](#)
- [Chapter 3, “Configuring Recommended Servers for Cisco Unified Personal Communicator”](#)

Application Dialing Rule Changes Required for Plus Dialing

The E.164 standard defines an international numbering plan for public phone systems. In the E.164 standard, each number contains a country code, an area code, and a subscriber number. Each phone user has a globally unique number.

If a phone number has a plus character (“+”) at the start, the number is in E.164 format. Phone numbers in LDAP directories can have a plus character prefix. Typically, when you dial an international number, you replace the plus character with the correct international access code for the locale from which you make the call. For example, in the United States, you replace the plus character with 011, in France you replace the plus character with 00, and so on. However, some phone systems allow you to dial the plus character directly.

You can configure Cisco Unified Communications Manager Release 7.0 to support the plus character in dialed numbers. Cisco Unified Personal Communicator Release 7.0 does not remove the plus character from dialed numbers. Releases of Cisco Unified Personal Communicator earlier than Release 7.0 do remove the plus character from dialed numbers.

You might only need to configure application dialing rules for numbers that users enter manually, if all of the following conditions are true:

- Your system uses only Cisco Unified Communications Manager Release 7.0 and Cisco Unified Personal Communicator Release 7.0.
- You have configured translation patterns in Cisco Unified Communications Manager to accommodate numbers that begin with a plus character.
- Your LDAP directory contains phone numbers that are only in full E.164 format and begin with a plus character.

You must configure the application dialing rules in Cisco Unified Communications Manager to remove the plus character from dialed numbers, if both of the following conditions are true:

- Support for the plus character is not enabled or supported in your Cisco Unified Communications Manager installation.
- Your LDAP directory contains phone numbers formatted with the plus character.

You do not need to reconfigure the application dialing rules if you reconfigure Cisco Unified Communications Manager to process the plus character correctly. However, in this case you might need to reconfigure the application dialing rules to support both Cisco Unified Personal Communicator Release 7.0, and releases earlier than Release 7.0.

Example of Application Dialing Rule Changes

The LDAP number of a user is +1 408 555 1212. Other users can dial this user at 85551212. Users within the same Cisco Unified Communications Manager cluster can dial the user at 51212. The following table shows sample application dialing rules for this scenario for Cisco Unified Personal Communicator Release 7.0, and for releases earlier than Release 7.0:

Release	Application Dialing Rules
Earlier than 7.0	<p>Outbound</p> <p>Any <i>one</i> of the following rules is suitable:</p> <p>numDigits 11 beginsWith 1408 remove 4 prefixWith 8</p> <p>numDigits 11 beginsWith 1408 remove 3 prefixWith <nothing></p> <p>numDigits 11 beginsWith 1408555 remove 6 prefixWith <nothing></p> <p>Inbound</p> <p>Any <i>one</i> of the following rules is suitable:</p> <p>numDigits 8 beginsWith 8555 remove 1 prefixWith +1408</p> <p>numDigits 8 beginsWith 8555 remove 0 prefixWith +140</p>
7.0	<p>Outbound</p> <p>Any one of the following <i>pairs</i> of rules is suitable. Each pair of rules supports both Cisco Unified Personal Communicator Release 7.0, and releases earlier than Release 7.0.</p> <p>numDigits 11 beginsWith 1408 remove 4 prefixWith 8</p> <p>numDigits 12 beginsWith +1408 remove 5 prefixWith 8</p> <p>numDigits 11 beginsWith 1408 remove 3 prefixWith <nothing></p> <p>numDigits 12 beginsWith +1408 remove 4 prefixWith <nothing></p> <p>numDigits 11 beginsWith 1408555 remove 6 prefixWith <nothing></p> <p>numDigits 12 beginsWith +1408555 remove 7 prefixWith <nothing></p> <p>Inbound</p> <p>Any <i>one</i> of the following rules is suitable:</p> <p>numDigits 8 beginsWith 8555 remove 1 prefixWith +1408</p> <p>numDigits 8 beginsWith 8555 remove 0 prefixWith +140</p>

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