

Cisco Unity Bulk Import Wizard Performance

Document ID: 41965

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Introduction

This document summarizes how the Cisco Unity Bulk Import wizard (CUBI) performs when creating different subscriber types in a simple test environment. As applicable, you can use the performance data presented here as a baseline for estimating the time it may take CUBI to create subscribers on the Cisco Unity server(s) in your organization.

CUBI is available with Cisco Unity version 4.0(x) with Microsoft Exchange and IBM Lotus Domino systems. As indicated in the following tables, CUBI allows Cisco Unity administrators to create multiple subscriber accounts at once by using imported user data.

This table shows data and subscriber account information when using the Cisco Unity Bulk Import wizard with Cisco Unity and Exchange.

Import Data From	Type of Subscriber Account
Exchange 5.5 Directory or Active Directory	Regular or Internet
Comma-separated value (CSV) file	Regular, Audio Messaging Interchange Specification (AMIS), Bridge, Internet, or Voice Profile for Internet Messaging (VPIM)

This table shows data and subscriber account information when using the Cisco Unity Bulk Import wizard with Cisco Unity and Domino.

Import Data From	Type of Subscriber Account
CSV file	Regular or Internet

Prerequisites

Requirements

Readers should be familiar with the CUBI Tool. If you would like to review this tool before reading this document, you can perform a search on Cisco.com for the "Cisco Unity Bulk Import Tool."

Components Used

The information in this document is based on the software and hardware versions below.

- Cisco Unity 4.0(2) server
- Microsoft Exchange 5.5 and 2000 servers
- IBM Lotus Domino server

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

Conventions

For more information on document conventions, see the Cisco Technical Tips Conventions.

Test Environment

This section includes information on the test environment used to generate the performance data presented in this document.

CUBI performance testing was conducted on Cisco Unity with Exchange and Cisco Unity for Domino. The configuration for each test server was simplified as much as possible to:

- Create a controlled test environment to prevent external variables (such as network traffic) from distorting test results.
- Provide a meaningful point of reference that can be used to infer CUBI performance in more complex environments.

For each test server, Cisco Unity was installed using the platform CD and CUSPA. The versions of Cisco Unity installed on each test server are earlier, unreleased versions of the Cisco Unity version 4.0(2) software. There is no functional difference between the versions of CUBI that were available with tested versions of Cisco Unity and the version of CUBI released with Cisco Unity version 4.0(2). Finally, all virus-scanning services and intrusion-detection software were disabled on the Cisco Unity server.

For more information on the configuration for each test server, see the Cisco Unity with Microsoft Exchange and Cisco Unity with IBM Lotus Domino sections of this document.

Cisco Unity with Microsoft Exchange

The two configurations tested are Cisco Unity with Microsoft Exchange 5.5 (Service Pack 4) and Cisco Unity with Microsoft Exchange 2000 (Service Pack 3). Cisco Unity version 4.0 (1.29) and the applicable Microsoft Exchange software were installed on a Dell 1400 server with 512 Mb RAM.

To accommodate importing large amounts of data, the page file and Exchange message store were moved from the C: drive to the E: drive on each test server.

Cisco Unity with IBM Lotus Domino

One configuration tested involved two test servers: a Cisco Unity server and an IBM Lotus Domino server. The two servers were connected by a 100 Mb Ethernet on the same 10/100 Mb LAN switch.

This table represents the Cisco Unity server.

Server	Cisco Unity Version	IBM Lotus Notes Version
Dell 1400 with 512 Mb RAM	4.0 (1.37)	5.0.10

This table represents the IBM Lotus Domino server.

Server	IBM Lotus Domino Version	IBM Lotus Notes Version
Dell 2400 with 512 Mb RAM	5.0.11 with DUCS 1.1 Gold	5.0.11

Test Methodology

CUBI performance was tested on Cisco Unity with Exchange 5.5, Cisco Unity with Exchange 2000, and Cisco Unity for Domino systems by creating multiple subscriber accounts using the methods indicated in this section. Performance data was collected from the error log file on each test server and used to create the graphs presented in the CUBI Performance Data section of this document.

Using CUBI to modify existing subscriber accounts was not tested.

Testing Cisco Unity with Exchange

CUBI was used to create from 1 to 7500 subscriber accounts by importing user data directly from the Exchange 5.5 directory or Active Directory (as applicable to the Exchange version tested), and by importing user data from a CSV file. All CSV files used in these tests contained the minimum number of columns and data required for each type of subscriber created. No additional column headers and data were included in the CSV files.

On the Cisco Unity Exchange 5.5 system, another test was conducted to document how CUBI performs when additional column headers and data are added to a CSV file that is used to create regular subscriber accounts.

Note that for Microsoft Exchange systems, CUBI can be used to create subscribers with or without existing Exchange mailboxes and Windows domain accounts by importing data from a CSV file. As common in most organizations, the CSV files used to test CUBI performance on Exchange 5.5 and 2000 systems did not

contain existing Exchange mailbox and Windows domain account data. Thus, CUBI created the mailboxes and domain accounts at the same time that the new Cisco Unity subscriber accounts were created.

Since CUBI can only create one subscriber type at a time, a separate performance test was conducted on the Exchange 5.5 and Exchange 2000 systems to create regular (unified messaging and voice mail only) and Internet subscriber accounts using each method. In between each test, the server was restored from an image of a fresh install, and then the Cisco Unity server was rebooted. (No AMIS, Bridge, or VPIM subscriber accounts were created during testing.)

Testing Cisco Unity with Domino

CUBI was used to create 1 to 2500 regular and 1 to 5000 Internet subscriber accounts for users with existing Domino Person documents by importing user data directly from a CSV file.

Note: CUBI supports the creation of a maximum of 7500 subscriber accounts at a time on any Cisco Unity server. Due to a limitation on time available for testing on the Cisco Unity with Domino system however, fewer subscriber accounts were created on the Cisco Unity with Domino system than on the Cisco Unity with Exchange systems.

All CSV files used in testing contained the minimum number of columns and data required for each type of subscriber created. No additional column headers and data were included in the CSV files.

As CUBI can only create one subscriber type at a time, a separate performance test was conducted to create regular (unified messaging and voicemail only) and Internet subscriber accounts. In between each test, the server was restored from an image or a fresh install, and then the Cisco Unity server was rebooted.

CUBI Performance Data

The graphs presented in this section represent CUBI performance data gathered from the error log file on each test server as subscriber accounts were created using the test methods indicated in the Test Methodology section of this document.

Since Cisco Unity administrators manually select which user data to import as the CUBI wizard proceeds. The elapsed time for individual CUBI operations is depicted rather than the total time it took CUBI to create subscriber accounts during testing. CUBI operations include:

CUBI Operation	Description
Header parsing ¹	When data is imported from a CSV file, CUBI validates all column headers in the CSV file. (No header parsing occurs when data is imported from an Exchange directory.)
Data parsing	When data is imported from a CSV file, CUBI validates all data in a CSV file. When data is imported from the Exchange directory, CUBI validates the data in the Exchange directory.
Pre-import check	CUBI performs additional checks, such as confirming that there are no duplicate DTMF IDs with existing Cisco Unity subscribers.
Import	Subscriber accounts are created in the SQL database on the Cisco Unity server.

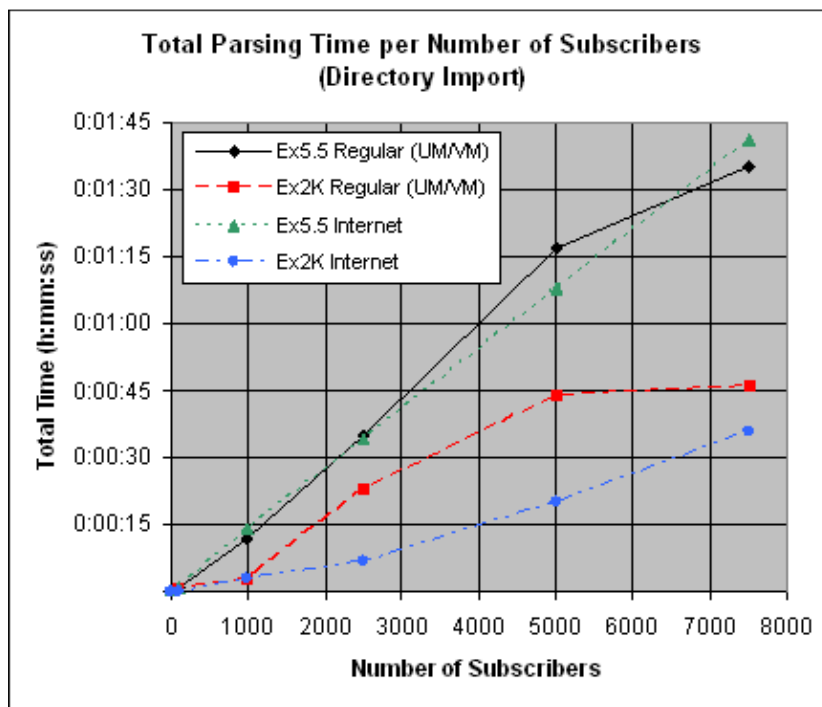
Synchronization	CUBI updates the applicable message store directory. On Cisco Unity with Exchange systems, mailboxes and Windows domain accounts are created when data is imported from a CSV file.
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¹ No graphs are provided for header parsing since the total time it took for CUBI to perform this operation was less than 1 second for every test on each test server.

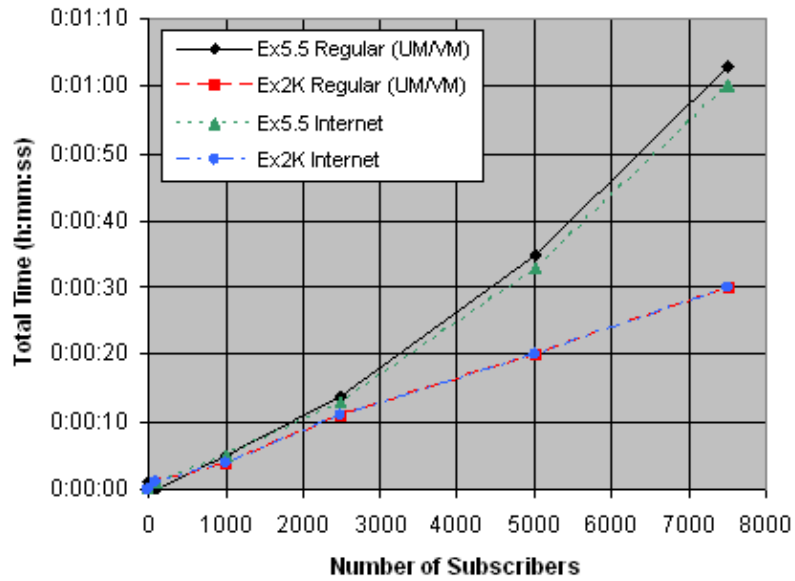
This section contains performance data for:

- Creating Subscribers by Importing Data from the Exchange Directory (Cisco Unity with Microsoft Exchange 5.5 and 2000)
- Creating Subscribers by Importing Data from a CSV File (Cisco Unity with Microsoft Exchange 5.5 and 2000)
- Creating Subscribers by Importing Data from a CSV File (Cisco Unity with IBM Lotus Domino)
- Creating Subscribers by Using Optional Column Headers in a CSV File

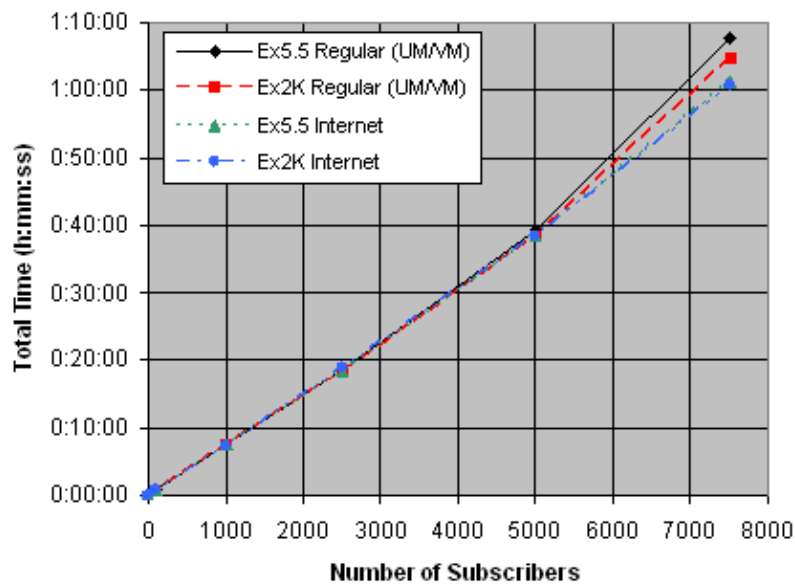
Creating Subscribers by Importing Data from the Exchange Directory (Cisco Unity with Microsoft Exchange 5.5 and 2000)

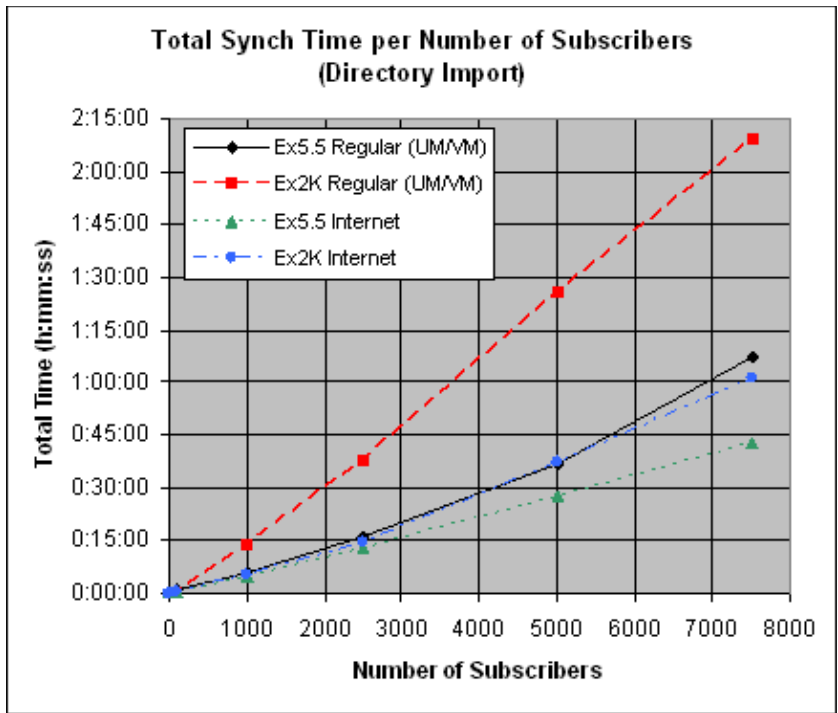


**Total Pre-Import Check per Number of Subscribers
(Directory Import)**

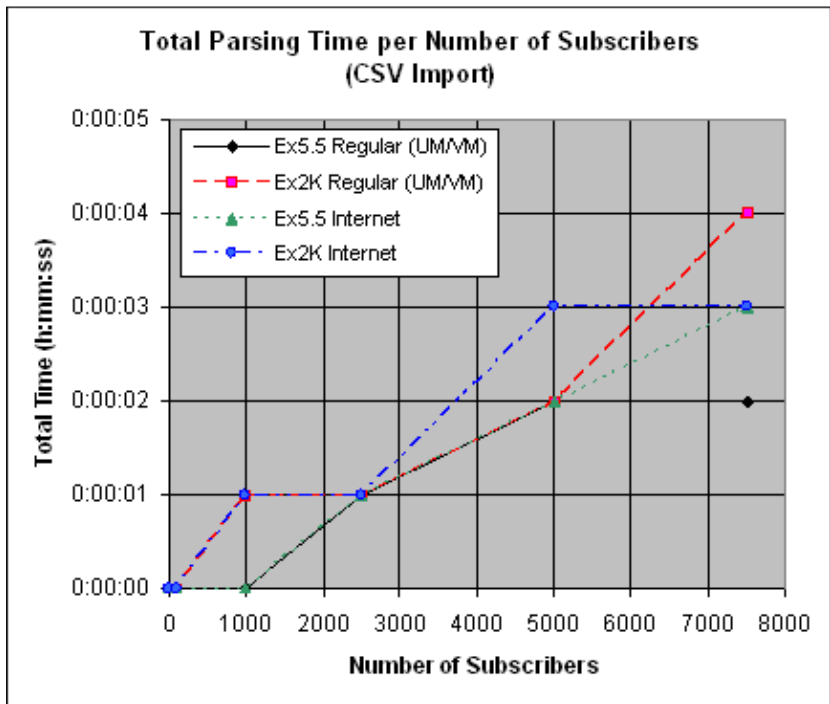


**Total Import Time per Number of Subscribers
(Directory Import)**

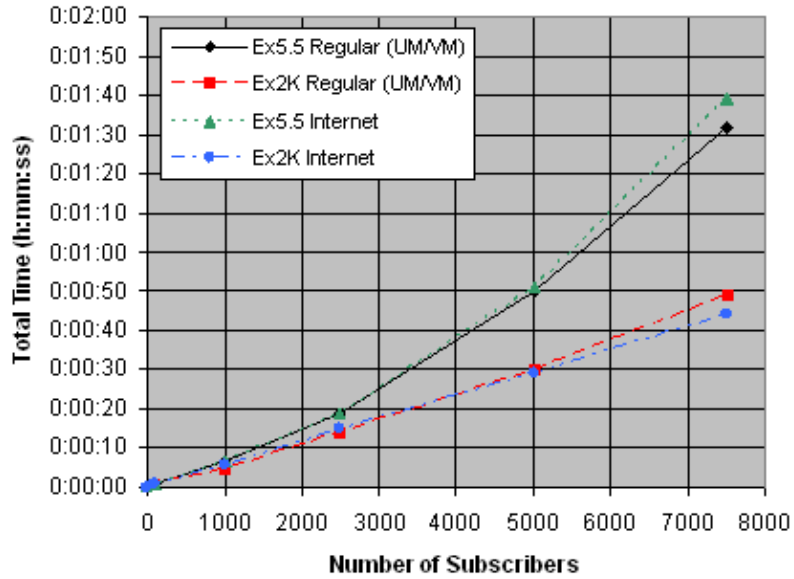




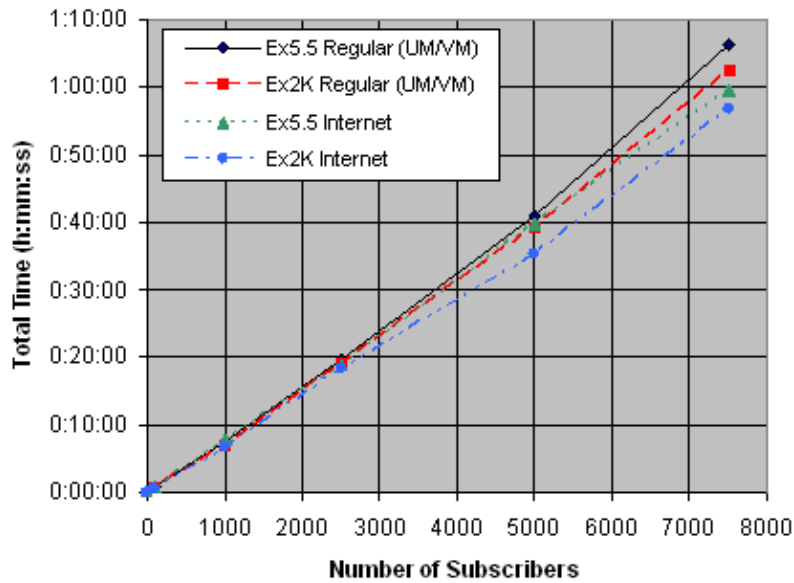
Creating Subscribers by Importing Data from a CSV File (Cisco Unity with Microsoft Exchange 5.5 and 2000)

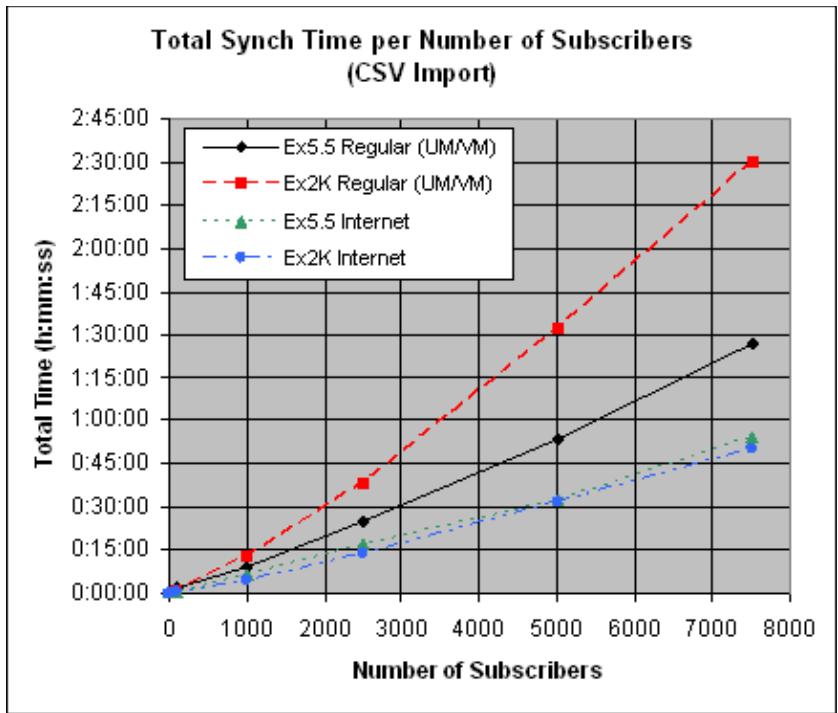


Total Pre-Import Check Time per Number of Subscribers (CSV Import)



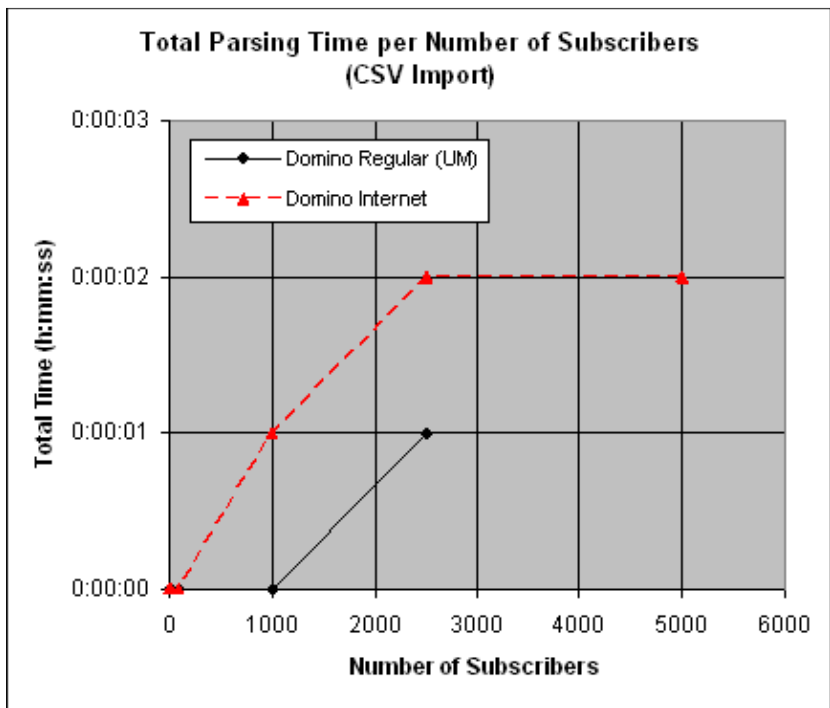
Total Import Time per Number of Subscribers (CSV Import)



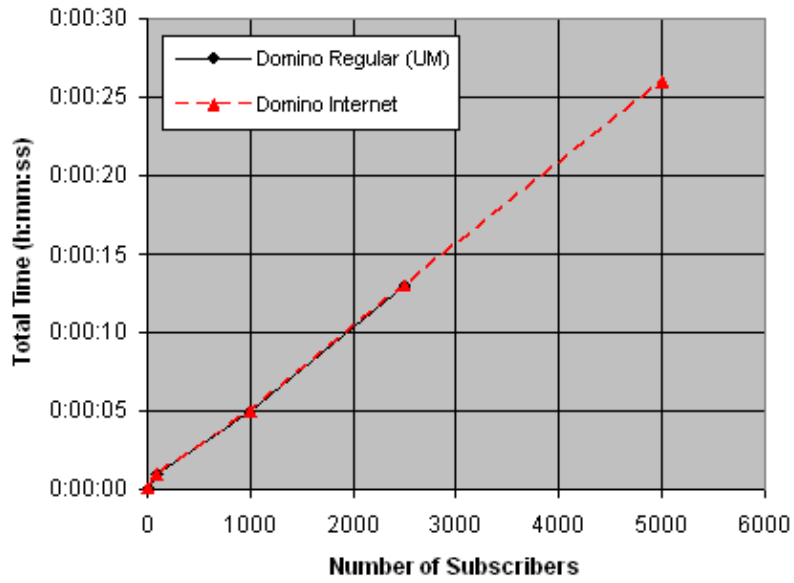


Creating Subscribers by Importing Data from a CSV File (Cisco Unity with IBM Lotus Domino)

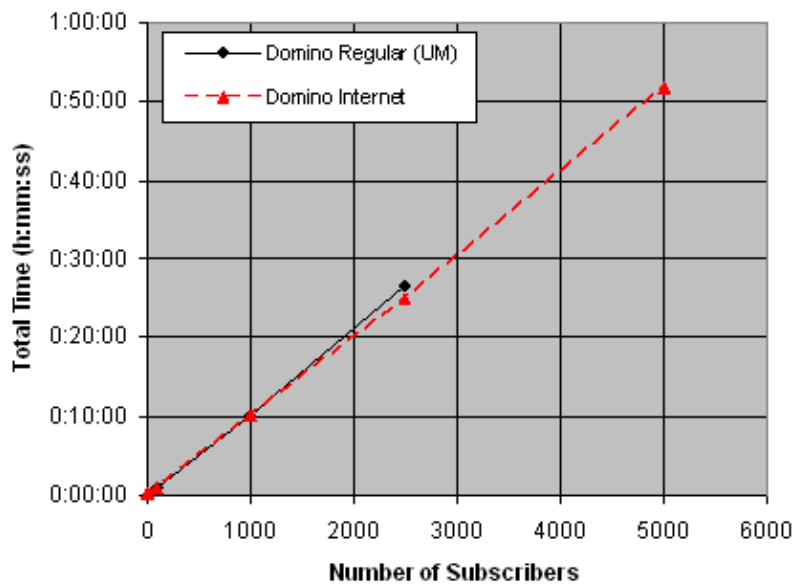
The graphs in this section do not depict the time it took for the Domino server to enable IBM Lotus Domino Unified Communications Services (DUCS) for Cisco Unity in each Person Document after CUBI created the subscriber accounts. Without a DUCS-enabled Person Document, the Cisco Unity subscriber accounts exist but are not functional. Depending on the number of subscribers, this process may take a significant amount of time. For more information, perform a search on Cisco.com for " Lotus Notes with DUCS for Cisco Unity" documentation.

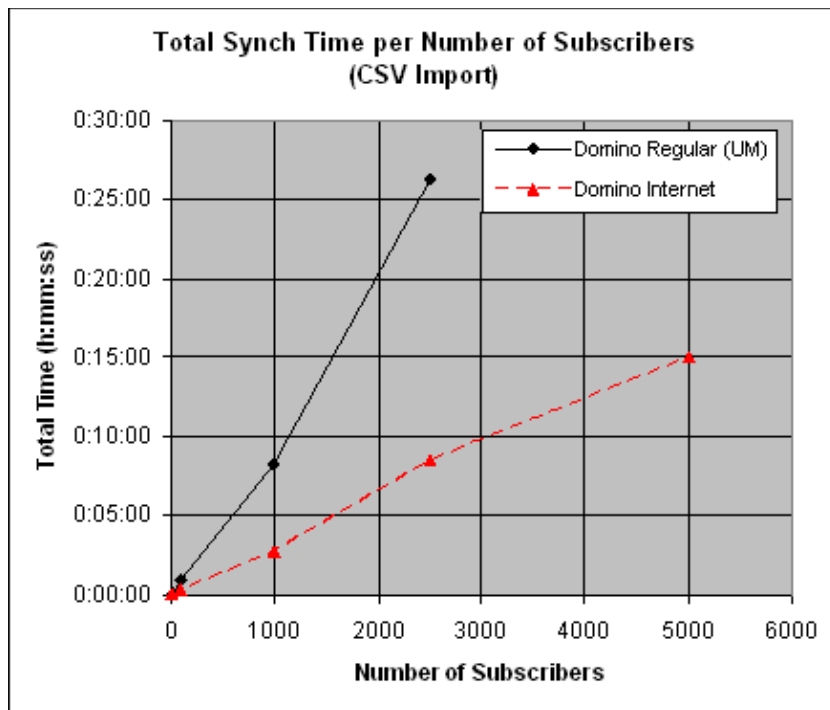


Total Pre-Import Check Time per Number of Subscribers (CSV Import)



Total Import Time per Number of Subscribers (CSV Import)

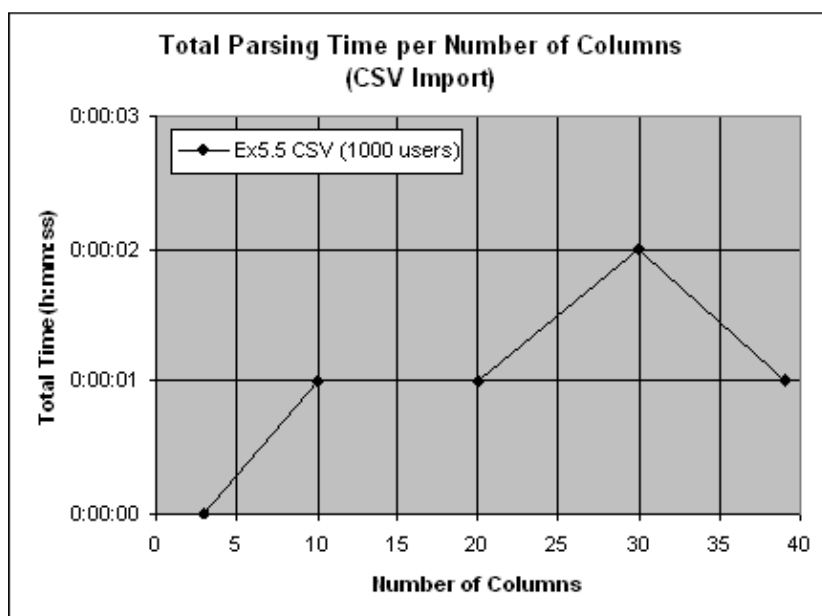




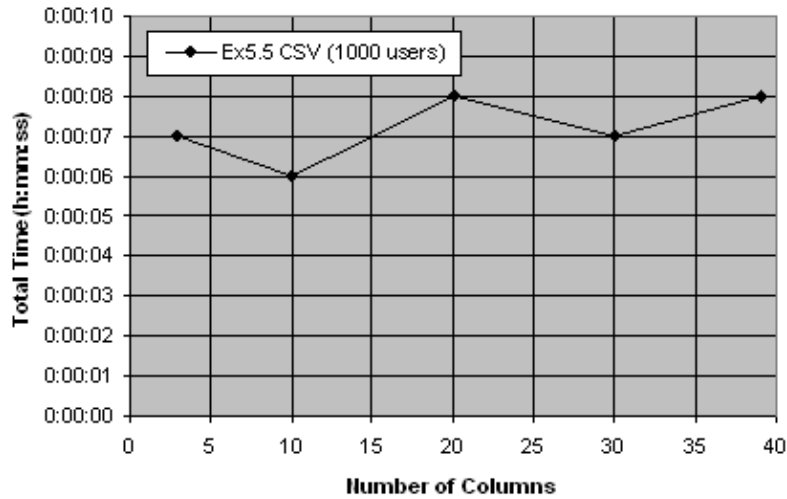
Creating Subscribers by Using Optional Column Headers in a CSV File

The graphs in this section depict CUBI performance when additional column headers and data are added to a CSV file that is used to create regular subscriber accounts. As the graphs in this section indicate, when a CSV file contains more than the minimum number of column headers, the time that CUBI spends parsing and importing data is increased. (The CSV test results illustrated in previous sections demonstrate CUBI performance when the CSV file contained only the minimum number of columns and data was required for regular and Internet subscriber accounts.)

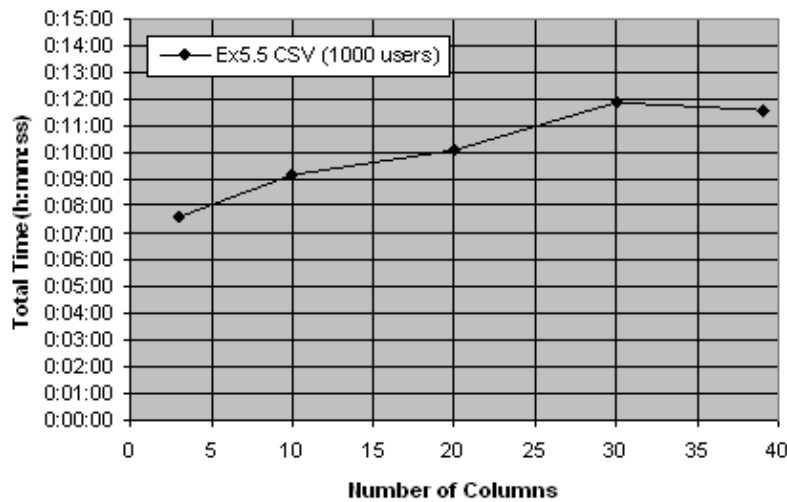
Although the test was only conducted on the Cisco Unity Exchange 5.5 system by using a CSV file with 1000 records, the test results likely indicate CUBI performance on Cisco Unity with Exchange 2000 and Cisco Unity with Domino systems when creating any number of subscriber accounts. In general, the more columns added to the CSV increases the time that CUBI takes to create subscriber accounts, though the time is not significant.

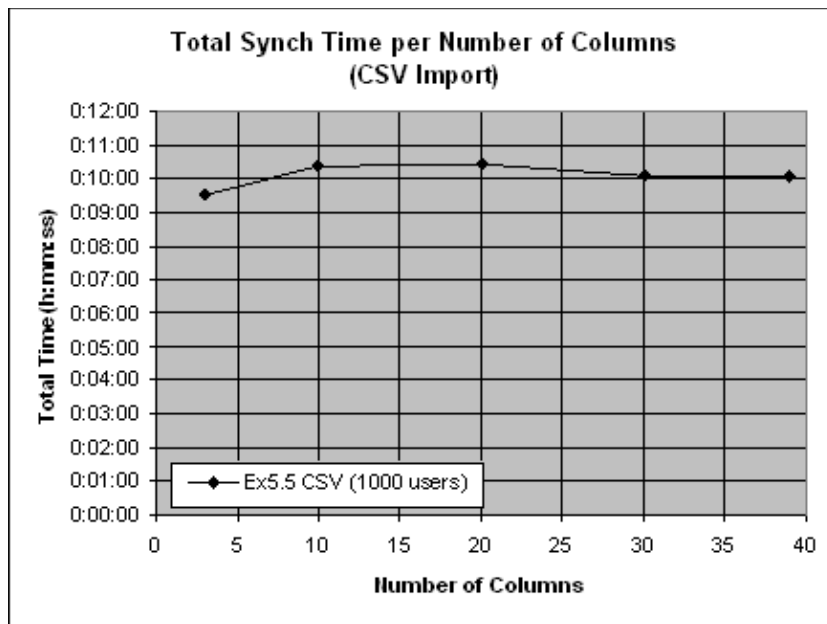


**Total Pre-Import Check Time per Number of Columns
(CSV Import)**



**Total Import Time per Number of Columns
(CSV Import)**





Using CUBI Performance Data

The performance data presented in the previous section can be summarized as such:

- On both Cisco Unity with Exchange and Cisco Unity with Domino systems, all CUBI operations average to under a second per subscriber per operation. This is true when importing data from a CSV file or from the Exchange directory.
- CUBI creates Internet subscribers faster than regular subscribers.

As applicable, you can use the data as a baseline for estimating the time it may take CUBI to create subscribers on the Cisco Unity server(s) in your organization. Consider this information as you prepare your estimate:

- CUBI performance improves when the Cisco Unity is installed on a server with high-performance, quality hardware.
- CUBI pre-import and synchronization operations are particularly impacted by network conditions when the message store is not installed on the Cisco Unity server.
- Disk, database, and message store fragmentation on the Cisco Unity server can negatively impact CUBI performance.
- CUBI may run slowly when virus-scanning services and intrusion-detection software are enabled on the Cisco Unity server.

Related Information

- **Cisco Unity Administration Guides**
 - **Cisco Unity Installation and Configuration Guides**
 - **Cisco Unity Bridge Networking Guide**
 - **Cisco Unity Pre-Installation Guides**
 - **Voice Technology Support**
 - **Voice and IP Communications Product Support**
 - **Recommended Reading: Troubleshooting Cisco IP Telephony**
 - **Technical Support & Documentation – Cisco Systems**
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Updated: Feb 02, 2006

Document ID: 41965
