MiCollab Advanced Messaging
MiCollab AM Scheduler
Administration Guide

For version 9.0 and above

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Preface

This guide is intended for administrators and technicians who are familiar with MiCollab Advanced Messaging (MiCollab AM), MiCollab AM terminology, and navigating through MiCollab AM Admin. This document assumes you have a basic understanding of MiCollab AM Admin, Call Processor mailboxes, and Extension Specific Processing (ESP).

This guide describes how to install MiCollab AM Scheduler, configure ESP Call Processor mailboxes, and create .CSV files for MiCollab AM Scheduler. The instructions in this document assume that MiCollab AM is installed and running successfully. The following topics are discussed in this document:

- The fundamentals and features of MiCollab AM Scheduler
- Creating and Editing the ESP schedules
- Creating and Changing .CSV files
- Extension Specific Processing (ESP)
- Route Codes
- Troubleshooting

Use this document in conjunction with the *System Installation and Configuration Guide,* the *System Administration Guide*, and with the MiCollab AM online help system.

References

A catalog of technical documentation is included on the MiCollab AM Installation Media. If you are installing any advanced applications, such as Networking and Fax Server applications, you should refer to the appropriate technical documentation for application and installation information.

Documentation

The technical documentation is produced in the PDF format and requires the PDF reader to view it. The documentation set for this MiCollab AM includes the following documents and resources:

- **Developer Resources.** Contains programming guides and API references for developers for integrating the server clients and web applications with MiCollab AM.
- **Integration Technical Notes (ITN).** Contains a set of guides that describe the integration methods and instructions for a variety of phone systems to work with MiCollab AM. The ITNs are generally used by resellers or administrators who are experienced with MiCollab AM and familiar with the integration procedures and terminology.
- **Quick Reference Card (QRC)**. Contains shortcuts and quick instructions telling subscribers how to access and use the messaging system.

- **Server Documentation.** Available as a PDF only. Contains administrative guides for administrators about installing, configuring, and administering the messaging system, and user guides for subscribers about accessing the messaging system and checking and sending messages.
- **Spare Parts Documentation.** Contains a set of guides that describe the instructions for installing and configuring hardware parts to work with MiCollab AM. These documents are written for Mitel certified MiCollab AM technicians who are experienced with MiCollab AM and familiar with the procedures and terminology.
- **Software Release Notice (SRN).** This notice introduces the new features, capabilities, and hardware/software requirements for the corresponding MiCollab AM version.

Documentation Updates

Documentation updates may be available from the following sources:

- Mitel certified technicians can view or download documents and program files from our partner web site: connect.mitel.com/connect

Help

The primary source of information about MiCollab AM is the online help available within any of its administrative utilities. You can access **Help** as follows:

- Click the **Help** button in the dialog box or window in which you are working
- Press the **F1** key at any time.

Document Conventions

The following conventions are used in this document:

- **Key Names.** Names of keys on the keyboard are shown in a box.

  > **Example:** Enter

  When two keys must be pressed simultaneously, they are joined by a + sign.

  > **Example:** Alt + Tab

- **Reference to Document.** *Italics* fonts can also signify the titles of other documents.

  > **Example**: See the *System Installation and Configuration Guide*.

- **UI Element Names.** Names of UI elements such as dialog windows, screens, menu items, tabs, buttons, icons, etc. are shown in bold.

  > **Example**: On the **Startup** screen, click the **Start** icon.

- **User Input.** Information required to be typed is shown in italics.

  > **Example**: Type the password *voicemail*.

- **Warning, Caution, Important, and Notes.** Text for the contents that require attention are shown as follows:

WARNING A warning paragraph advises you of circumstances that can result in the loss of data, harm to the system server platform, or personal harm.

CAUTION Failure to follow these recommendations can result in unauthorized access to the system and consequent loss of data.

IMPORTANT An important paragraph gives decision-making information or informs you of the order in which tasks need to be completed.

NOTE A note gives additional information, provides an explanation, or indicates an exception to the information in the preceding text.

Frequently Used Terms

Table 1. Frequently Used Terms

Terms	Description
System Server	Term refers to an organization's computer platform(s) that have MiCollab AM software installed and handles the core system functions such as storing messages, database. It can also refer generically to the System Server platform, the Call Server platform, or both. The term is most often used to describe a software or hardware installation or configuration practice where the role of the server platform is not specifically expressed.
Call Server	Term refers to an organization's computer platforms that have MiCollab AM software installed and serve as the interface to the system (PBX). The Call Server(s) interface with the System Server for the purpose of accessing messages, and database.

MiCollab AM Scheduler Overview

MiCollab AM Scheduler is an ancillary application used to augment the Extension Specific Processing (ESP) capabilities of MiCollab AM.

MiCollab AM Scheduler provides the ability to configure individual subscriber ESP Call Processor mailboxes on a time of day, day of week, or specific date basis. This gives the administrator the ability to create sophisticated personal and departmental menus as well as interactive audio menu applications for specific extensions based on time and date.

To utilize MiCollab AM Scheduler, the MiCollab AM Admin utility creates and edits ESP schedules with any text editing or spreadsheet application capable of creating a Comma Separated Value (.CSV) file. The administrator uploads the .CSV schedule file to each individual Call Server utilizing the program and starts the MiCollab AM Scheduler application. Administrators can change or update the schedule at any time by using the copy functions inherent to the Microsoft operating system.

Once MiCollab AM Scheduler is in operation, its executable file is launched from a Call Processor (designated as the ESP for a particular subscriber) and returns digits to that Call Processor. The digits it returns depend upon which line in its .CSV file is matched.

When an forwarded extension number is returned to MiCollab AM on a no answer, busy or Call Blocking basis, MiCollab AM sends the call to MiCollab AM Scheduler where the extension number is matched in the active schedule file with a corresponding output number. The output number is immediately sent back to MiCollab AM for Enhanced ESP call processing. Incoming calls with route code numbers are processed through MiCollab AM Scheduler in a similar fashion.

Before You Begin

If you are installing MiCollab AM Scheduler on a new MiCollab AM installation, Mitel recommends you allow subscribers to use MiCollab AM for a period of at least five business days prior to implementing MiCollab AM Scheduler. Implementing MiCollab AM in this manner allows subscribers to become familiar with the basic features of MiCollab AM and allows administrators to isolate problems and identify application inaccuracies. After the installation is working well and any problems have been resolved, implement one ancillary application at a time. To avoid confusion and delays in problem resolution, test each new application thoroughly before installing another.

- Read this document in its entirety before you begin installing MiCollab AM Scheduler and configuring the MiCollab AM application.
- If you are not the site administrator maintaining MiCollab AM on a daily basis Mitel recommends you involve the individual who is responsible for the day to day maintenance and work together to create the application and numbering plan for the MiCollab AM Scheduler application.
- Before using MiCollab AM Scheduler, you must create and save an ESP schedule (SX.CSV) file as described in the section, Creating and Editing the ESP Schedule.
- Plan your MiCollab AM Scheduler application carefully before you create any ESP Call Processor mailboxes. Every subscriber using MiCollab AM Scheduler might have multiple Call Processor mailboxes associated with the Subscriber mailbox extension number. Plan your work to create an organized numbering plan for Call Processor mailboxes for each subscriber. This helps you to create a well-designed and easy to follow application that allows others to understand the flow-through of the application.
- Create the Call Processor mailboxes before you implement MiCollab AM Scheduler and thoroughly test each application manually before you enable it in MiCollab AM Scheduler. A graphic representation or flow chart is helpful to work out all the design issues and can save time in isolating problems.
- If you are installing MiCollab AM Scheduler in a multi-Call Server environment, you must install the SX.LIC (license file), the SX.exe (executable file) and all SX.CSV (schedule files) on each individual Call Server that processes calls using MiCollab AM Scheduler.

Installation Requirements

MiCollab AM Requirements

- MiCollab AM software version 9.0
- A MiCollab AM Scheduler license and executable file installed on each Call Server or System Server with Call Services that runs MiCollab AM Scheduler.

Installing MiCollab AM Scheduler

The following installation instructions assume you have installed the MiCollab AM software to the Mitel recommended default location of D:\CX. If your MiCollab AM software is running on a different drive or directory, adjust the following instructions accordingly, to match your site requirements. You must install MiCollab AM Scheduler on each Call Server platform that utilizes the program.

- MiCollab AM Scheduler can be installed while MiCollab AM is running
- No restart or downtime is required
- MiCollab AM Scheduler is ready to use as soon as the installation is completed.

IMPORTANT You must install the **SX.LIC** (license file), the **SX.EXE** (executable file) and all **SX.CSV** (schedule files) on each individual Call Server that processes calls using MiCollab AM Scheduler.

To install MiCollab AM Scheduler on a Call Server platform:

1. Select **Start** > **My Computer**, and then double-click hard disk **(D:)**.
2. Double-click the folder **CX**, and then select **File** > **New** > **Folder**.
3. Rename the new folder to **SX**.
4. Right-click on the new **SX folder**, and then select **Sharing and Security**.
5. Enable network sharing and allow read/write permissions for the MiCollab AM Admin's Windows Active Directory account. The administrator adds and modifies files to the new **D:\CX\SX** directory from their workstation.
6. Copy the MiCollab AM Scheduler license file to the new **SX** folder. The license file is included with your MiCollab AM Scheduler order. You may have received the license file by e-mail, or it may be on a media such as CD-ROM.

   IMPORTANT The license file may have a name such as XXXXX.AAL or XXXXX.LIC, where XXXXX is the Mitel order number for your MiCollab AM Scheduler order. Do not confuse the license file with the executable file (**SX70.EXE**). The MiCollab AM Scheduler license file must be named SX.LIC and it must exist in the **\CX\SX** folder that you created. MiCollab AM Scheduler cannot run if the license file is not named **SX.LI**C and it is not in the proper location.

7. If necessary, rename the license file so that it has the name of **SX.LIC** (not case-sensitive).

   IMPORTANT Do not open, modify, or attempt to edit the MiCollab AM Scheduler license file. If you change the contents of the license file, MiCollab AM Scheduler cannot recognize it.

8 Copy the executable file named **SX70.EXE** to the **\CX\BIN** folder.

IMPORTANT Do not copy the executable file to the **\CX\SX** folder that you created. It must be in the **\CX\BIN** folder in order for MiCollab AM to run it.

9 Perform **Steps 1** through **8** for each Call Server that runs MiCollab AM Scheduler.

Creating the MiCollab AM Scheduler Schedule (SX.CSV)

Before you can create the schedule (**SX.CSV**) file for MiCollab AM Scheduler, you must have the schedule information for every subscriber, the subscriber extension numbers, and the ESP Call Processor mailboxes associated with every Subscriber mailbox managed by MiCollab AM Scheduler.

Depending on the type of Enhanced Extension Specific Call Processing application you are creating, a unique Call Processor mailbox or a range of Call Processor mailboxes may be required for each subscriber and each schedule change. Mitel recommends you plan the application thoroughly before you create the MiCollab AM Scheduler **SX.CSV** file.

Creating and Editing the ESP Schedule

To implement MiCollab AM Scheduler, the MiCollab AM Admin utility must create an ESP schedule with an editing program that is capable of saving data as comma separated value (.CSV) type files. Most any spreadsheet or text editor program such as Notepad is capable of doing so; choose one you are comfortable using. The programming examples shown in this document were created with Microsoft Excel.

Creating .CSV files is performed at the administrator's workstation, not on the MiCollab AM server. The administrator creates the initial **SX.CSV** file, modifies it whenever necessary, and uploads it to the **\CX\SX** directory of MiCollab AM when finished. Changes to MiCollab AM Scheduler take place immediately once you install the file on MiCollab AM. A system restart is not required.

IMPORTANT Do not install a spreadsheet application on the Call Server platform. Install only MiCollab AM and Mitel-approved applications on a Call Server or System Server platform. Installing unapproved applications may disrupt call processing, and cause system failure or downtime.

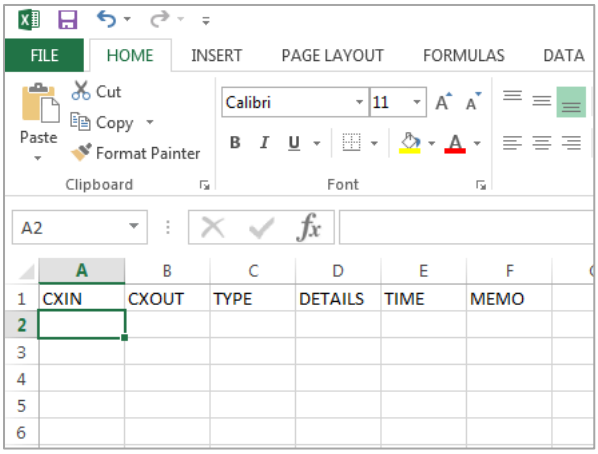
To create an ESP schedule:

1. Open Excel and begin with a blank worksheet. Create a header row with the following column headers: CXIN, CXOUT, TYPE, DETAILS, TIME, and MEMO. MiCollab AM Scheduler does not require a header row; it is used solely as a navigational aid for the administrator.

   NOTE If you use Excel or another spreadsheet program, format the cells as text to avoid having the application change the data you enter to a different format.

   For example, DATE must be entered as an eight digit number, as in MM/DD/YYYY.

   The following image provides an example of the header row.



2 Using the information you have collected for the MiCollab AM Scheduler application, fill in each column with the appropriate information for every subscriber and schedule change. Complete all entries for each subscriber extension before moving on to the next subscriber extension.

> **NOTE** MiCollab AM sends the number dialed to MiCollab AM Scheduler. A number conversion or database lookup for alternate device numbers does not take place. You must enter all device numbers into the SX.CSV file, each on an individual row if your application requires their use.

The following table provides header definitions for the MiCollab AM Scheduler **SX.CSV** file. Refer to these header definitions while you are editing the file.

Table 2. MiCollab AM Scheduler SX. CSV Header Definitions

Header	Description
CXIN	CXIN represents the string of digits sent to MiCollab AM Scheduler by MiCollab AM. This digit string is the subscriber's extension number.
CXOUT	CXOUT represents the digit string sent to MiCollab AM by MiCollab AM Scheduler when a schedule entry is in effect. This digit string is any set of valid characters that MiCollab AM understands, and can cause MiCollab AM to jump to a particular Call Processor mailbox number, invoke a transfer, or carry out any other Call Processor mailbox action. Valid characters are digits **0-9**, *****, **#**, **A-D**.
TYPE	TYPE must be one of the following: **DAYS**, **WEEKDAY**, **DATE**, **DEFAULT**, or **OVERRIDE**. See Table 3. Definition of Field Values for the TYPE and DETAIL Columns for a description of these values.
DETAILS	Define specific schedule entries here. The **DETAILS** column defines the TYPE column entry. The DETAILS column specifies what DAYS a schedule is valid, or specifies what DATE is valid. When the TYPE column list DAYS, then the DETAIL column defines which days. When the TYPE column lists a DATE, then the DETAILS column defines the date.

	For some schedule entries, such as OVERRIDE, DEFAULT, or WEEKDAY the DETAILS column is blank. See Table 3. Definition of Field Values for the TYPE and DETAIL Columns for a description of these values.
TIME	For most schedule entries, a TIME is entered in this field, representing the time of day that this schedule entry is to take effect. Certain schedule entries do not need a time value. All times must be entered in 24-hour format. **For example:** 13:00 for 1:00 PM
MEMO	The MEMO field is for administrative purposes only. MiCollab AM Scheduler does not process the information in the memo column.

The following table provides an explanation of the field entries for the TYPE column.

Table 3. Definition of Field Values for the TYPE and DETAIL Columns

Value	Definition
DAYS	Define the DAYS entry with the first three characters of the day you are using. **For example:** MON TUE WED THU FRI SAT SUN Use this entry type for ESP schedules that recur on a daily basis. **For example:** If you want the same call processing to occur for extension 1234 every Monday, Tuesday, Wednesday, Thursday, and Friday starting at 8:30 Am, then a DAYS entry would be appropriate.
WEEKDAY	The WEEKDAY type works in the same manner as a DAYS entry, but only applies to one day of the week. When a DAYS entry and WEEKDAY entry reference the same day, MiCollab AM Scheduler uses the WEEKDAY entry. **For example:** If you want the same call processing to occur for extension 1234 every Monday, Tuesday, Wednesday, Thursday, and Friday starting at 8:30 AM, but then have a different routine on Thursdays beginning at 9:30 AM, you would use a WEEKDAY entry for the Thursday call-processing schedule.
DATE	DATE refers to a specific date. The date that you specify must be in the format MM/DD/YYYY, it must include the year in four-digit format. MiCollab AM Scheduler only evaluate a DATE entry on the specified date. DATE entries also have a starting time value, allowing you to indicate that the "normal" schedule applies until a certain time on a specific date. When a DATE type of schedule entry is valid, it supersedes any DAYS and WEEKDAY entries that refer to the same day/time.
DEFAULT	DEFAULT is an "all other conditions" schedule that is in effect when none of the DAYS, WEEKDAY, or DATE entries apply. In order to understand the use of the DEFAULT type

of schedule entry, it is important to realize that MiCollab AM Scheduler evaluates every schedule entry with a starting point of midnight.

Thus, if extension 1234 has one schedule entry of all DAYS with a starting time of 7:30 AM, the period between 12:00 AM and 7:29 AM does not have an ESP schedule.

When you specify a DEFAULT schedule, you ensure that desired call processing occurs during any periods when no other schedule entry applies.

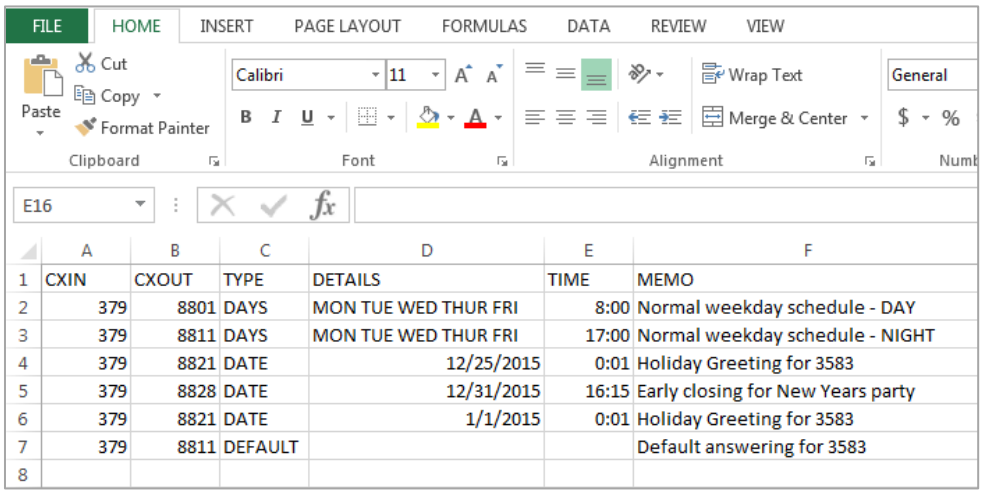
The logic used by MiCollab AM Scheduler is similar, but not identical, to the logic used by Answer Mode in MiCollab AM. In MiCollab AM Scheduler, all entries that specify a given day are evaluated using 12:00:01 AM of that day as the starting point.

Therefore, if the only ESP schedule entry for a given day has a starting time of 9:00 AM, that entry is not in effect until 9:00 AM, and is in effect until 11:59:59 at the longest.

IMPORTANT All MiCollab AM Scheduler ESP extensions should have a default entry.

OVERRIDE	When an OVERRIDE is configured for a specific extension, it unilaterally overrides all other schedule entries for that extension, regardless of how closely those other entries match the current day, date or time. An OVERRIDE is usually only used for emergencies, maintenance, or testing. No date or time is specified for an override entry.

The following sample **SX.CSV** file is an example of a complete ESP schedule configured for extension 379.



	A	B	C	D	E	F
1	CXIN	CXOUT	TYPE	DETAILS	TIME	MEMO
2	379	8801	DAYS	MON TUE WED THUR FRI	8:00	Normal weekday schedule - DAY
3	379	8811	DAYS	MON TUE WED THUR FRI	17:00	Normal weekday schedule - NIGHT
4	379	8821	DATE	12/25/2015	0:01	Holiday Greeting for 3583
5	379	8828	DATE	12/31/2015	16:15	Early closing for New Years party
6	379	8821	DATE	1/1/2015	0:01	Holiday Greeting for 3583
7	379	8811	DEFAULT			Default answering for 3583
8						

Figure 1. Time of day data for ESP extension 379

On weekdays between 8:00 AM and 5:00 PM, MiCollab AM Scheduler sends digits 8801 to MiCollab AM if MiCollab AM sends digits 379 to MiCollab AM Scheduler. (See line 2 of the worksheet).

For night answering after 5:00 PM on weekdays, MiCollab AM Scheduler sends digits 8811 to MiCollab AM if MiCollab AM sends digits 379 to MiCollab AM Scheduler. (See line 3 of the worksheet).

Configure holiday answering for specific dates. (See lines 4, 5, and 6 of the worksheet).

In the example above, at any time when no particular DAYS or DATE schedule is applicable, MiCollab AM Scheduler uses the DEFAULT and send digits 8811 to MiCollab AM if MiCollab AM sends digits 379 to MiCollab AM Scheduler. (See line 7 of the worksheet).

IMPORTANT All MiCollab AM Scheduler ESP extensions must have a DEFAULT entry in the SX.CSV file. The DEFAULT entry is what MiCollab AM Scheduler uses when no other DAYS, WEEKDAY, or TIME entry is in effect. See Table 3. Definition of Field Values for the TYPE and DETAIL Columns for more information on the DEFAULT entry.

When you have finished creating or editing the schedule file, you must save it as a comma-separated-values file (CSV). This is not the native file format, you must select the .CSV file type deliberately during the file saving dialogue. Some applications refer to this file type as a delimited flat file or comma-delimited. Save the file as **SX.CSV**.

IMPORTANT Some versions of Microsoft Excel do not terminate each row with a comma. Be sure that the .CSV file you create has a comma at the end of each line entry. If there is no comma at the end of each line, the line is ignored by MiCollab AM Scheduler.

The following is an example of saving the file in Microsoft Excel as SX.CSV.

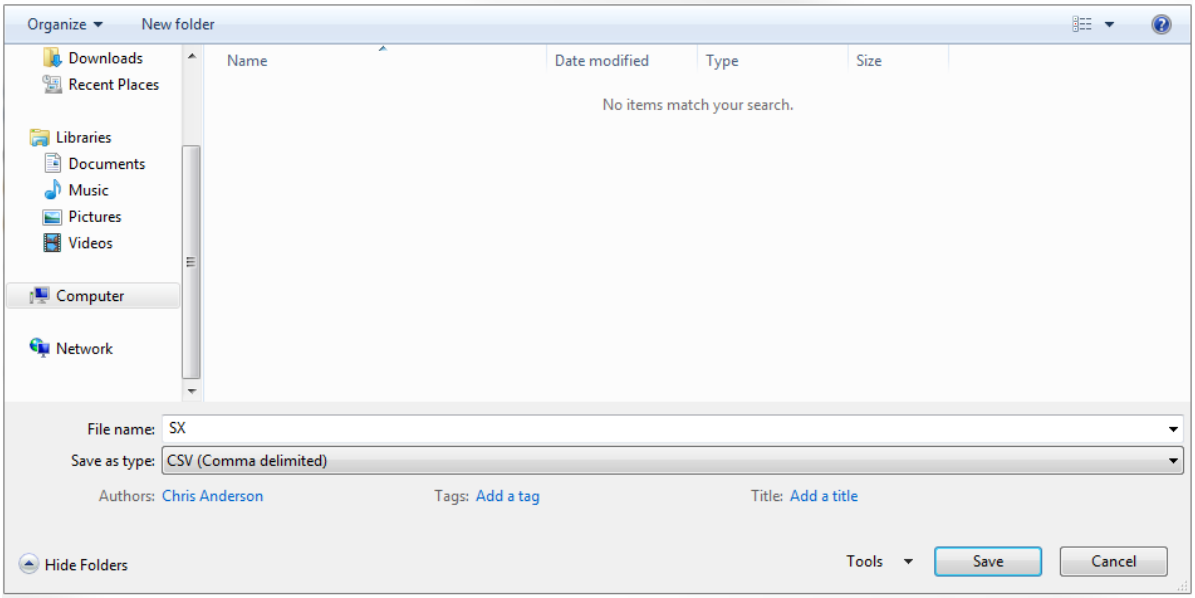


Figure 2. Saving Excel SX file as CSV file

IMPORTANT Changing a file extension name from one file type to .CSV does not create a valid .CSV file.

Once you have saved the **SX.CSV** file you must copy it to the **\CX\SX** folder of the Call Server that is running MiCollab AM Scheduler. This is the current schedule file and the only .CSV file MiCollab AM Scheduler uses when invoked.

Save or copy the **SX.CSV** file to the MiCollab AM network share you previously created that resolves to **\CX\SX** on the Call Server. Mitel recommends you keep a current copy of all **SX.CSV** files on your own workstation for modification and editing purposes, and then copy them to the MiCollab AM **\CX\S**X share when you are done.

Changing the MiCollab AM Scheduler Schedule (SX.CSV)

You must make schedule changes on each Call Server processing the calls. The current schedule file is always **SX.CSV**. Administrators change the schedule by replacing the current **SX.CSV** schedule file with any alternate .CSV file through the GUI of the Call Server, or through the network using another server or workstation to access the **\CX\SX** folder of the Call Server.

Because the process of changing schedules requires the contents of the existing **SX.CSV** file to be replaced by the contents of an alternate **SX.CSV** file, it is important to always keep a copy of the existing SX.CSV file as one of the alternate files.

A simple method to copying an alternate .CSV file to the current **SX.CSV** file without destroying the contents of the alternate file is to use the copy command in the command line window (cmd.exe). The following procedure uses the copy command to copy the contents of the alternate **SX1.CSV** file to the **SX.CSV** file on the Call Server.

To copy the contents of an alternate SX1.CSV file to the SX.CSV:

1. Open the **Command Prompt** application.
2. In the **Command Prompt** window, type *D:* and then press **Enter**.
3. At the **D:>** prompt, type *cd cx\sx*, and then press **Enter**.
4. At the **D:\CX\SX:>** prompt, type *copy sx1.csv sx.csv*, and then press **Enter**.
5. At the **Overwrite sx.csv? <Yes/No/All>** prompt, type *y*, and then press **Enter**.
6. The **SX1.csv** file contents is copied to the **SX.csv** file.

Configuring the ESP Call Processor Mailboxes

Configure the ESP Call Processor mailboxes to have MiCollab AM start the MiCollab AM Scheduler application, and then pass the appropriate digits to MiCollab AM Scheduler. MiCollab AM uses the Execute action type in the ESP Call Processor mailbox of each Subscriber mailbox to start MiCollab AM Scheduler and pass the subscriber's extension number, the **CXIN** number, to MiCollab AM Scheduler. MiCollab AM Scheduler then sends the related **CXOUT** number back to MiCollab AM to start the Enhanced Extension Specific Call Processing. Every subscriber's ESP Call Processor mailbox that uses MiCollab AM Scheduler must be configured to use this Execute command, followed by the subscriber's unique extension number.

A typical MiCollab AM Scheduler application would use the Execute action type in the Timeout (TO) key of the ESP Call Processor mailbox. The Timeout of the Call Processor is set to 0 seconds.

In this example, when a caller calls extension **379** and the call is sent to MiCollab AM on an aborted transfer, forwarded condition or Call Blocking is enabled, the ESP Call Processor mailbox **7288**, if enabled, immediately times out, runs the **SX70.EXE** command and sends the **CXIN** number to MiCollab AM Scheduler.

MiCollab AM Scheduler finds the related **CXOUT** number 8801 or 8811, and sends it back to MiCollab AM. These actions occur instantaneously; the caller is unaware of any delay in call processing. The following image provides shows ESP Call Processor mailbox **7288** as described in this example.

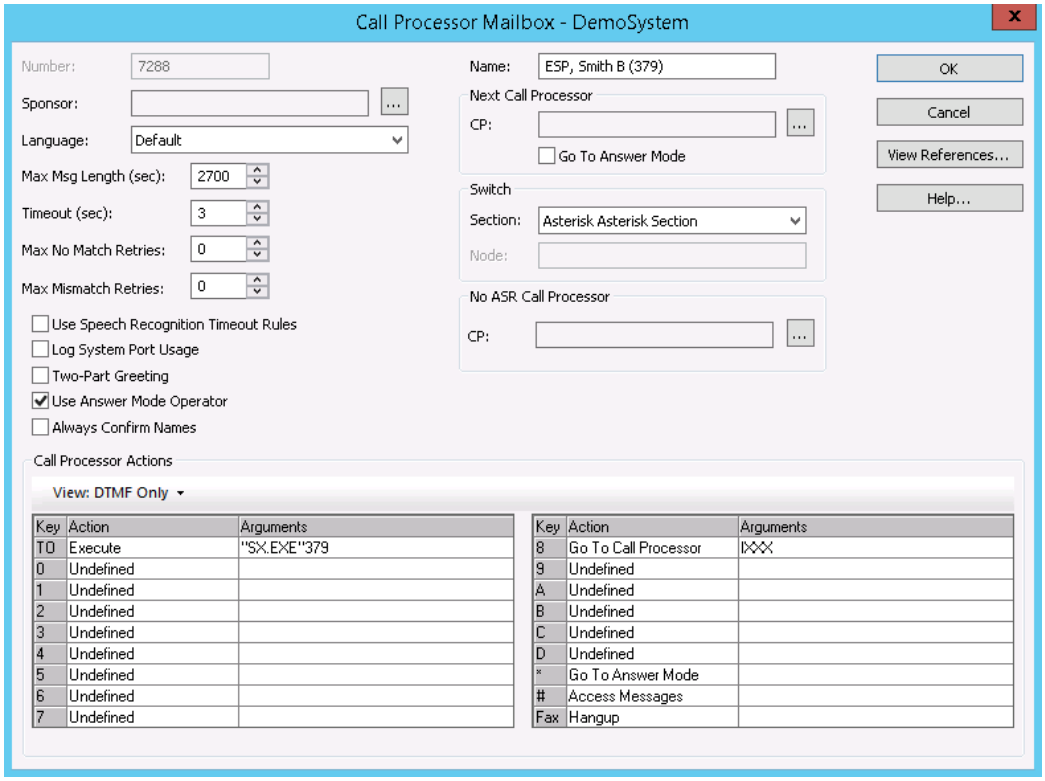


Figure 3. Example of ESP Call Processor mailbox configured for MiCollab AM Scheduler

In the example SX.CSV file (Figure 1. Time of day data for ESP extension 379) from the Creating the MiCollab AM Scheduler Schedule (SX.CSV) chapter, notice that MiCollab AM Scheduler is programmed to return a string to MiCollab AM of 8801, 8811, 8821, or 8828. These mailbox numbers are the CXOUT numbers.

Now look at Call Processor mailbox 7288 and notice that the 8 key has been defined as **Go To Call Processor** with a number template of **IXXX**. When MiCollab AM Scheduler passes the CXOUT number back to MiCollab AM, MiCollab AM ignores the first 8 with the use of the **I** (ignore) character in the **IXXX** template.

The three remaining digits passed by MiCollab AM Scheduler complete the template; MiCollab AM invokes Call Processor mailbox 801, 811, 821, or 828 depending on the specified time of day or date.

NOTE MiCollab AM Scheduler can use any of the 16 DTMF characters, (0-9, *, #,A-D) as valid characters in the CXIN and CXOUT fields.

Using Route Codes

Configure Call Processor mailboxes used in route code applications in the same manner as the previous example. Be sure the route code application is working correctly before you enable it to work with MiCollab AM Scheduler.

Using a Common ESP Call Processor to Start the MiCollab AM Scheduler Application

It is possible to route callers through one common ESP Call Processor mailbox for multiple subscriber extension numbers, thereby considerably reducing the size of your application.

The application design is similar to the previous example, with one exception. Instead of using the subscriber extension number in unique Call Processor mailboxes, the Call Processor template characters S (Store) and R (Recall) are used throughout the MiCollab AM application.

In the common ESP Call Processor mailbox, R (Recall) is used to recall the S (Store) digits. The Answer mode Call Processor mailbox receives an incoming call, a transfer request to extension 379 is initiated using the template characters SSS in the Arguments field.

When the transfer is aborted or is returned to MiCollab AM as an integrated forwarded call, MiCollab AM directs the call to the common ESP Call Processor mailbox (9033 in this example), and the template digits **RRR** recall the digits 379 in the Arguments field following the Execute "**SX70.EXE**" command in the TO (Timeout) action.

NOTE If subscribers receive calls from outside the Automated Attendant (via DID, Tie Line, etc.) the Store and Recall template characters cannot be used and the common ESP Call Processor mailbox does not pertain to your application.

IMPORTANT If you are creating a MiCollab AM Scheduler application with the use of the Store (S) and Recall (R) Call Processor mailbox template characters, then you must use the template characters in every Call Processor mailbox within the MiCollab AM application that performs transfers or uses the subscriber extension number for any other purpose.

The following image is an example of the common ESP Call Processor mailbox.

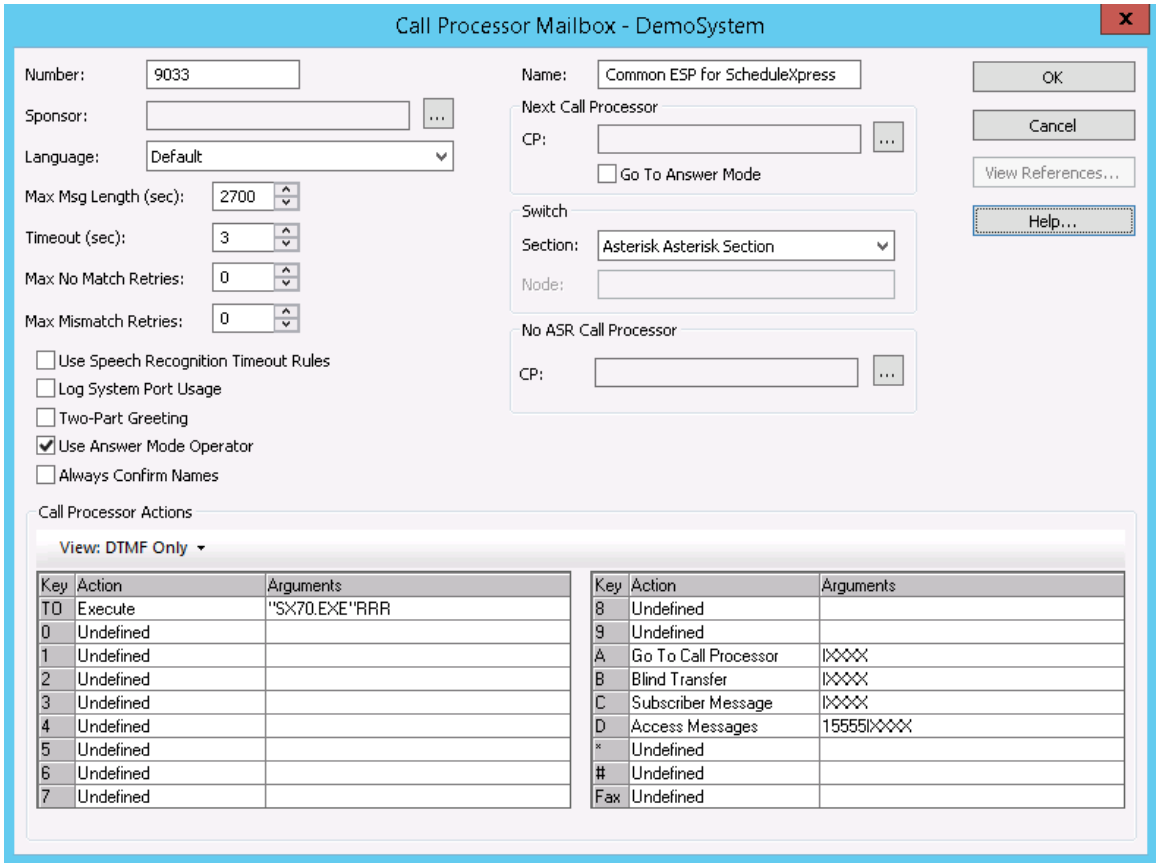


Figure 4. Example of a Common ESP Call Processor Mailbox

Using the Execute Command

The location of the quotation marks is significant when using the Execute command in the Arguments field of the Call Processor mailbox. Data within quotation marks is a command string sent to initiate another program, in this case MiCollab AM Scheduler.

MiCollab AM runs the command string but performs no other processing or translation. Data outside quotation marks is processed or translated, if within the bounds of MiCollab AM, after the command is run. In our example, the command **Execute SX70.EXE** starts MiCollab AM Scheduler. Then MiCollab AM processes whatever is outside the quotation marks, a number or a valid Call Processor template character, and then sends the digits to MiCollab AM Scheduler.

When you configure a Call Processor mailbox for use with MiCollab AM Scheduler you must:

- Use the SX70.EXE command in the Arguments field.
- The command must be within double quotation marks (" ").
- The command must be the first object in the Arguments field.
- The Call Processor digit or template character (the CXIN number) follows the "SX70.EXE" command to steer MiCollab AM Scheduler to the CXOUT number.

> **NOTE** You must insert a space (spacebar) between the last quotation mark and the CXIN number.

The following table provides an explanation of the use of quotation marks in a Call Processor mailbox. Notice the location of the quotation marks and the results as defined in the Results column.

Table 4. Proper use of quotation marks in a Call Processor mailbox

Action	Argument	Results
Execute	"SX70.EXE"678	Launches MiCollab AM Scheduler and sends 678 as the data.
Execute	"SX70.EXE"XXX	Launches MiCollab AM Scheduler and sends the numeric contents of the template characters XXX as the data.
Execute	"SX70.EXE"RRR	Launches MiCollab AM Scheduler and recalls the telephony-numeric contents of the integrated call, or template characters SSS as the data.
Execute	"SX70.EXE XXX"	Not valid. Launches MiCollab AM Scheduler and sends nothing as the data.

Managing MiCollab AM Scheduler Log Files

MiCollab AM Scheduler dynamically creates log files to record activities and operational events, including errors. Log files are stored in the MiCollab AM log file directory, D:\CX\LOG. MiCollab AM Scheduler creates a new log file every hour, by line number, for every call that runs MiCollab AM Scheduler during the hour on that particular line. At the beginning of each hour, MiCollab AM Scheduler creates a new log file to log activity for the duration of the hour.

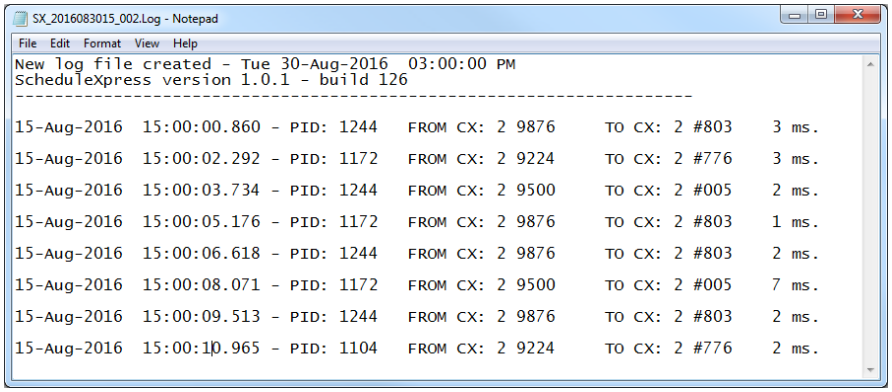
The naming convention for every MiCollab AM Scheduler log file is SX_DDMMYYYYHH_XXX.Log, where: “SX” is MiCollab AM Scheduler, “DD” is the current day, “MM” is the current month, and “YYYY” is the current year. “HH” is the current hour (24-hour format), and XXX is the MiCollab AM port number.

> **For example:**
>
> If the current date and time is August 30, 2016, the current time is 3:00 PM, and the MiCollab AM line number is 2, MiCollab AM Scheduler logs events to a file named **SX_201683015_002.Log**.

Every time MiCollab AM runs MiCollab AM Scheduler, an entry is written to a log file, as described above. A typical log file has the following information:

- The date, in the format of DD-MM-YYYY
- The time, in the format of HH:MM:SS.nnn (where "nn" is hundreds of a second).
- The process identifier (PID) assigned by Windows for each call when MiCollab AM Scheduler runs (this information is used by support personnel for troubleshooting).
- The data that received from MiCollab AM, preceded by the tag FROM MiCollab AM: (This is the CXIN number).
- The data that sent to MiCollab AM based on the MiCollab AM Scheduler lookup, preceded by TO CX: (This is the CXOUT number).
- The number of milliseconds that it took from the moment that MiCollab AM Scheduler starts to return a value to MiCollab AM. The nominal range for this number is generally in the range of 0 to 200 but is dependent on factors such as system load, CPU availability, and the size of the MiCollab AM Scheduler data file.

The following is an example of a MiCollab AM Scheduler log file for August 30, 2016 at 3PM.

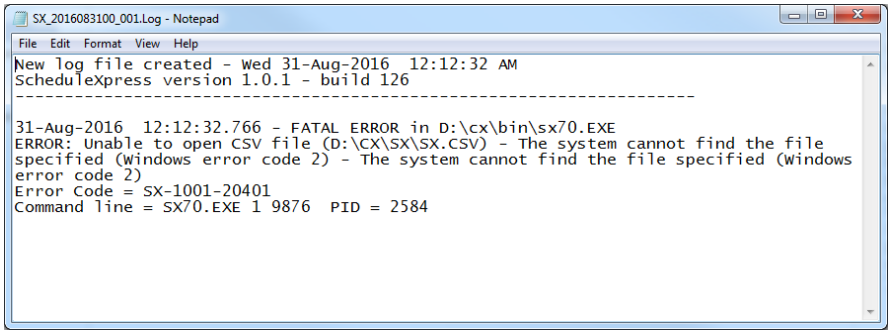


```
SX_2016083015_002.Log - Notepad
File  Edit  Format  View  Help
New log file created - Tue 30-Aug-2016  03:00:00 PM
ScheduleXpress version 1.0.1 - build 126
-----------------------------------------------------------------------

15-Aug-2016  15:00:00.860 - PID: 1244   FROM CX: 2 9876     TO CX: 2 #803    3 ms.
15-Aug-2016  15:00:02.292 - PID: 1172   FROM CX: 2 9224     TO CX: 2 #776    3 ms.
15-Aug-2016  15:00:03.734 - PID: 1244   FROM CX: 2 9500     TO CX: 2 #005    2 ms.
15-Aug-2016  15:00:05.176 - PID: 1172   FROM CX: 2 9876     TO CX: 2 #803    1 ms.
15-Aug-2016  15:00:06.618 - PID: 1244   FROM CX: 2 9876     TO CX: 2 #803    2 ms.
15-Aug-2016  15:00:08.071 - PID: 1172   FROM CX: 2 9500     TO CX: 2 #005    7 ms.
15-Aug-2016  15:00:09.513 - PID: 1244   FROM CX: 2 9876     TO CX: 2 #803    2 ms.
15-Aug-2016  15:00:10.965 - PID: 1104   FROM CX: 2 9224     TO CX: 2 #776    2 ms.
```

Figure 5. Typical MiCollab AM Scheduler Log File

If an error occurred while MiCollab AM Scheduler initiated, details of the error are written to the log file as shown in this example.



```
SX_2016083100_001.Log - Notepad
File  Edit  Format  View  Help
New log file created - Wed 31-Aug-2016  12:12:32 AM
ScheduleXpress version 1.0.1 - build 126
-----------------------------------------------------------------------

31-Aug-2016  12:12:32.766 - FATAL ERROR in D:\cx\bin\sx70.EXE
ERROR: Unable to open CSV file (D:\CX\SX\SX.CSV) - The system cannot find the file
specified (Windows error code 2) - The system cannot find the file specified (Windows
error code 2)
Error Code = SX-1001-20401
Command line = SX70.EXE 1 9876  PID = 2584
```

Figure 6. MiCollab AM Scheduler Log File Displaying an Error

Purging Log Files with the SX70.EXE command

MiCollab AM Scheduler log files remain on the system until you intentionally remove them. To aid in removing log files MiCollab AM Scheduler includes a maintenance command to purge log files from a command line.

You can purge log files from the command line using the SX70.EXE command. You run the command with a delimiter to define what log files to purge, along with the purge switch. The delimiter switch is a numerical value in hours (1-128).

The value specified tells MiCollab AM Scheduler to delete all log files older than the number specified. Use the purge switch to delete the log files.

> **For example:** The command line SX70 24 /PURGE would delete all log files older than 24 hours.

IMPORTANT Never run MiCollab AM Scheduler manually from the command line without using the /PURGE switch. If you run SX70.EXE manually without the /PURGE parameter, MiCollab AM Scheduler could send inappropriate call processing instructions to MiCollab AM and cause call processing errors.

To purge log files from the command line:

1. Open the **Command Prompt** application.
2. In the **Command Prompt** window, type *D:*, and then press **Enter**.
3. At the **D:>** prompt, type *cd cx\log*, and then press **Enter**.
4. At the **D:\CX\LOG>** prompt, type *SX70 24 /PURGE*, and then press **Enter**.

   All log files older than 24 hours are purged from the system. Close the Command window when you are finished.

Deleting Log Files Manually

Log files can also be deleted manually from the system.

To delete log files manually:

1. Select **Start** > **My Computer**, and then double-click hard disk drive **(D:)**.
2. Go to the **CX** > **LOG** folder.
3. Select the log files you want to delete, and then press **Delete**.
4. Click **OK** to confirm the deletion.

Troubleshooting MiCollab AM Scheduler

ScheduleXpress} is designed to minimize the disruption of call processing should an application error occur. If MiCollab AM Scheduler encounters an error or is unable to determine the correct digits (CXOUT) to send to MiCollab AM, it simply terminates without sending any data to MiCollab AM. MiCollab AM immediately resumes from the point when it started MiCollab AM Scheduler.

The MiCollab AM Scheduler log files provide the best source of information to help isolate troubles. The log files contain an entry for every call that starts MiCollab AM Scheduler along with a corresponding explanation of the event. Mitel recommends you use the same MiCollab AM line for all of the test calls when you are troubleshooting a MiCollab AM Scheduler problem. By doing so, you need only consult one log file to help identify the problem.

To troubleshoot MiCollab AM Scheduler:

1. Verify MiCollab AM is configured to run the MiCollab AM Scheduler application as designed—the subscriber has ESP enabled in the Subscriber mailbox, the correct ESP mailbox is assigned to the Subscriber mailbox, and the ESP Call Processor mailbox is configured correctly.
2. Make a test call and note the time you called.
3. Open the log file associated with the MiCollab AM line used to make the call. Use the description of the call event to help isolate the error.

If you suspect that the MiCollab AM Scheduler application itself is causing a system problem, you can isolate the source quickly by renaming the SX70.EXE file to some other name, such as SX70.sav. If the problem persists after renaming the executable, then MiCollab AM Scheduler is not the cause. If renaming the file causes the problem to end, then the MiCollab AM Scheduler application is the cause.

IMPORTANT Be aware that renaming the executable file causes any valid MiCollab AM Scheduler operations to fail until you change the name back to SX70.EXE.

The following table provides a list of common symptoms and the likely causes when MiCollab AM Scheduler fails to perform as expected.

Table 5. Troubleshooting MiCollab AM Scheduler

Symptoms	Likely Cause
When MiCollab AM runs MiCollab AM Scheduler, the caller hears *invalid entry* and no data is sent to MiCollab AM by MiCollab AM Scheduler.	1. In the Arguments field associated with the Execute action, SX70.EXE is spelled incorrectly or quotations omitted. 2. The file SX70.EXE is not in the \CX\BIN directory. 3. There is no CXOUT number corresponding to the CXIN number in the SX.CSV file.

When MiCollab AM starts MiCollab AM Scheduler, nothing happens. MiCollab AM simply continues as if no input was received.	The ESP schedule file (SX.CSV) does not contain an appropriate entry for the extension number (CXIN) sent by MiCollab AM. Check the MiCollab AM Scheduler log files to confirm what numbers MiCollab AM is sending to MiCollab AM Scheduler. The MiCollab AM Scheduler log files also contain exception entries if no matching schedule entries were found.
Changes were made to the ESP schedule file (SX.CSV) but MiCollab AM Scheduler ignores the changes as if the old file is there.	After saving changes, make sure you close the CSV file (within the editing application). MiCollab AM Scheduler cannot *see* the new data until the file has been saved and closed in the application.
The MiCollab AM Scheduler log file has error entries that read, *Empty field in CSV file, invalid record-ignored*.	**1** One or more lines in the CSV file have incomplete data. Unless all of the required columns are completed for each line, MiCollab AM Scheduler cannot determine how to apply the schedule entry. **2** No comma terminates the end of a row.
MiCollab AM Scheduler behaves as if there are no ESP schedules on file, and the log file has entries that read *CSV line too long* and/or Invalid numeric data for extension number.	The SX.CSV file was not saved as a .CSV file. To properly save the CSV file, you must explicitly specify *Comma Separated Values* or *CSV* as the file format type.
MiCollab AM Scheduler does not use the day-of-week entry configured for a particular extension.	Check for any relevant schedule entries of the following type: Single Day, Date, and Override. These entries always have precedence if there is a date and time conflict.
MiCollab AM Scheduler does not work, and errors appear in the MiCollab AM Scheduler log saying, License credential error.	The MiCollab AM Scheduler license file that you are using contains the wrong MiCollab AM serial number. Contact Mitel technical support for assistance.