Verix eVo AutoDL

Reference Guide

Verix eVo AutoDL Reference Guide
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Introduction

VeriFone terminals run applications that may require updates whenever new releases are available. AutoDL is an application that automates checking and downloading application updates from the server to the terminal.

This version of AutoDL only works with VX 520 and VX 680 terminals.

AutoDL is designed to work with VeriCentre 3.0 Enterprise version. AutoDL can download any application/software like VMAC, VCS, etc.

> **NOTE**
>
> VeriCentre 3.0 Enterprise version is referred to as VeriCentre throughout this document.

This guide provides the overview, functionalities, and the working of the AutoDL application. It also provides information on configuring the parameters of the application to suit your requirements.

Audience

This manual is intended for:

- ADC (Application Development Centre) programmers
- VeriFone solution providers

System Specifications

VeriCentre application administrators must refer to the `Verix_eVo_Readme.txt` of this product for system specifications and software requirements.

Conventions

Various conventions are used to help you quickly identify special formatting. These conventions are listed in the table below.

Table 1   Document Conventions

Convention	Meaning
ref[n]	This denotes reference to the nth document in the Related Documentation section, where n is 1, 2, 3...
Italics	*Italic* face indicates book titles or emphasis.
Courier	The courier typeface is used while specifying onscreen text, such as text that you would enter at a command prompt.

Table 1   **Document Conventions**

Convention	Meaning
NOTE	Points out important and useful information.
❌	This is the standard VeriFone terminal CANCEL key. The key is colored red.
⬅	This is the standard VeriFone terminal CLEAR (BACKSPACE) key. The key is colored yellow.
↵	This is the standard VeriFone terminal ENTER key. The key is colored green.
F1	These are the standard VeriFone terminal Function keys (labeled F1 to F4). These keys are colored grey. These keys are not found on the VX 680.
ALPHA	This is the standard VeriFone terminal ALPHA key used to enter alphabet characters. The key is colored grey. This key is not found on the VX 680.
⬭	These are the standard VeriFone terminal Programmable Function keys. These 4 keys are unlabeled and colored purple. These keys are not found on the VX 680.

Acronyms and Abbreviations

Acronym	Expansion
CDMA	Code Division Multiple Access
EESL	Extended Event Services Layer
GID	Group ID
GPRS	General Packet Radio Service
GSM	Global System for Mobile Communications
IP	Internet Protocol
OS	Operating System
RDL	Resumable Download
SSL	Secure Socket Layer
UI	User Interface
URL	Uniform Resource Locator
VC	VeriCentre
VCS	Verix eVo Communication Server
VMAC	Verix eVo Multi-Application Conductor

Related Documentation

To learn more about AutoDL, refer to the following set of documents:

VeriCentre Download Automation Reference Manual   VPN 24698

AutoDL Overview

This chapter provides an overview of AutoDL, its functionalities, and its interaction with VeriCentre for update checks and downloads.

AutoDL Functionalities

The AutoDL application has the following functionalities:

- Regularly checks for application updates available on VeriCentre.
- Supports multiple VeriCentre hosts via use of VeriCentre profiles.
- Connects to a VeriCentre host using dial-up or IP-based communication.
- Downloads any software from VeriCentre onto the terminal. This ensures that all software on the terminal are the latest versions.

VeriCentre Profiles

A VeriCentre profile is a set of CONFIG.SYS parameters used to configure the update check and download settings for connecting to a VeriCentre host.

One VeriCentre profile can be loaded onto each GID, except for GID 15, which makes a total of 14 VeriCentre profiles loadable per terminal. However, because of optimizations in AutoDL's usage of RAM memory, only the first five (5) VeriCentre profiles will be used by AutoDL.

The download is initiated at the GID where the VC profile resides. A VC profile residing in GID 1 can download updates to any GID, while a VC profile residing in GIDs 2 to 14 is restricted to only downloading updates to the GID where the VC profile resides.

Update Checks

AutoDL checks for application updates regularly based on the following configurations:

- Frequency of checks
- Number of retries on failing to connect
- Retry interval
- Reschedule after retry failures

All these have default configurations but these can be changed to suit your requirements. Refer to the Configuration Parameters section for more details on configuration of parameters.

Apart from the scheduled automatic update checks, AutoDL also allows you to manually initiate the update check at any time by selecting the **Check for Updates** option on the AutoDL main menu. Refer to the Chk for Updates section for more details on checking for updates.

Interaction of AutoDL with VeriCentre

AutoDL is a VMAC-compliant application and acts as a client to VCS. AutoDL's interaction with VeriCentre is described below.

Figure 1 depicts the interaction between AutoDL and VeriCentre. These components communicate with each other over IP or through Dial without PPP.
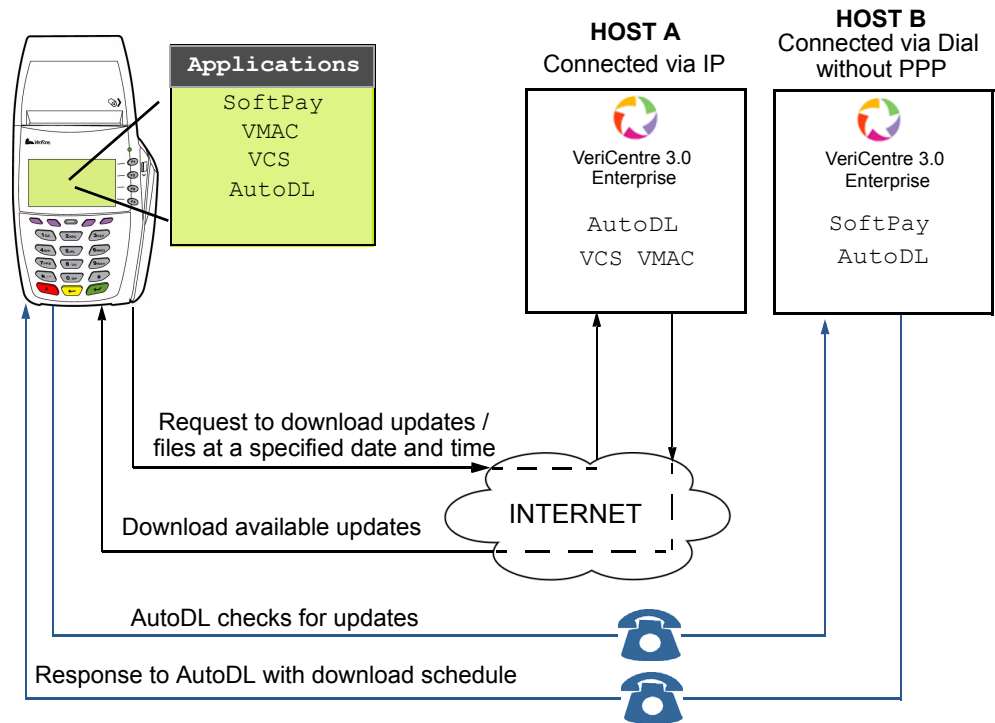
Figure 1   Interaction Between AutoDL and VeriCentre

AutoDL Parameters

The activities of checking for updates and downloading them are automated by the AutoDL application. The schedule for these activities can be configured using AutoDL parameters. This chapter lists and describes the configurable parameters of AutoDL.

When AutoDL is downloaded to the terminal, its parameters contain default values. You can change these values to suit your requirements.

Configuration Parameters

Following are the configuration parameters of AutoDL:

- #ADL_CHK_INTERVAL
- #ADL_DL_ON_TIMEOUT
- #ADL_DL_WINDOW
- #ADL_DL_RETRY
- #ADL_DL_RETRY_LIMIT
- #ADL_DLD_ENABLE
- #ADL_EVT_RESP_TIMEOUT
- #ADL_FAILURE_MSG
- #ADL_FAILURE_MSG_DLD
- #ADL_GIDS_TO_CHECK
- #ADL_HOST_NAME
- #ADL_MODE
- #ADL_PRINT_REPORT
- #ADL_RETRY
- #ADL_RETRY_DAYS
- #ADL_RETRY_LIMIT
- #ADL_SCHED_OVERRIDE
- #ADL_SKIP_NEW_INSTALL_DLD
- #ADL_SUCCESS_MSG
- #ADL_SUCCESS_MSG_DLD
- #ADL_TERM_ID

The following configuration parameters are for IP, Dial with PPP, and GSM with PPP mode only:

- #ADL_NEW_FORMAT
- #ADL_ON_NON_SSL
- #ADL_USE_SSL
- #ADL_HOST_PORT
- #ADL_DL_HOST_PORT
- #ADL_HOST_URL
- #ADL_DL_HOST_URL

The following parameters are used for Dial without PPP and GSM without PPP modes:

- #ADL_DIAL_PREFIX
- #ADL_HOST_PHONE
- #ADL_DL_HOST_PHONE

The following parameters are used for specifying update check time, download time, update check response timeout, and modem settings:

- #ADL_START_TIME
- #ADL_END_TIME
- #ADL_DL_START_TIME
- #ADL_DL_END_TIME
- #ADL_RECV_TIMEOUT
- #ADL_DIAL_RECV_TIMEOUT
- *ZINIT

The following parameters are used to configure AutoDL to work with upcoming/ new terminals that have similar hardware with the already existing terminals:

- #ADL_MEDIATYPE
- #ADL_DIALPPPSUPP

The following parameter is used to configure AutoDL user interface's password protection:

• #ADL_PASSWD

The following parameter is used to display or hide the VC Profile List screen when there is only one VC profile in the terminal:

• #ADL_ALWAYS_SHOW_PROFLIST

The following parameters are used to specify the VMAC latent key, UI idle timeout, and error beep:

• #ADL_RUN_LATENT

• #ADL_MENU_IDLE_TIME

• #ADL_VMAC_IDLE_TIME

• #ADL_ERROR_BEEP

The parameters along with their default values are explained in the following table:

Table 2   AutoDL Configuration Parameters

Parameter Name	Type	Default Value	MIN	MAX	Description
#ADL_CHK_INTERVAL	Number	Dial (PPP, no PPP): 30 IP: 3	1	180	Specifies the time between two update checks. The frequency of update checks is determined by the time specified in this parameter. The interval is set in days. If this variable is not found, AutoDL uses the default value.
#ADL_DL_ON_TIMEOUT	Selection	NO			Specifies the behavior of AutoDL when the application does not respond to a download allowed check. AutoDL will first check for this parameter in the GID where the application resides. If not found, it will then check in the GID where the VC profile resides. Set the value to GO to proceed with the download if the application does not respond. The default NO value does not allow the download to proceed when the application does not respond.

Table 2 **AutoDL Configuration Parameters**

Parameter Name	Type	Default Value	MIN	MAX	Description
#ADL_DL_WINDOW	Number	10080	60	43200	Specifies the time interval allotted for a download in minutes. If the download time exceeds the specified time interval, the download will no longer be performed and AutoDL resumes doing update checks.
#ADL_DL_RETRY	Number	2	1	100	Specifies the number of minutes to allocate before AutoDL attempts to download an update after a failed previous attempt.
#ADL_DL_RETRY_LIMIT	Number	3	1	100	Specifies the number of times to retry a download after a failed previous attempt.
#ADL_DLD_ENABLE	Selection	0			Specifies whether or not to enable automated downloading. Set the value to 1 to enable automated downloading, and to 0 to disable the function. Since the default value is 0, this parameter is mandatory to enable the VeriCentre profile for automated downloads when creating a new profile.
#ADL_EVT_RESP_TIMEOUT	Number	5	1	90	Specifies the number of seconds to wait for a response from the application to proceed with the download.
#ADL_FAILURE_MSG	String	None			Specifies a custom message in the summary report for a failed update check. The maximum length is 128 characters.
#ADL_FAILURE_MSG_DLD	String	None			Specifies a custom message in the summary report for a failed download. The maximum length is 128 characters.

Table 2   AutoDL Configuration Parameters

Parameter Name	Type	Default Value	MIN	MAX	Description
#ADL_GIDS_TO_CHECK	String	All			Specifies a comma-separated list of GIDs. AutoDL will only check the applications residing in these GIDs to see if the download is to be allowed before it downloads the updates from VeriCentre. If the value of this parameter is invalid or "ALL" or if it is not specified, then AutoDL will check with applications residing in all the GIDs.
#ADL_HOST_NAME	String				Specifies the logical name of the VeriCentre host. The maximum length is 30 characters. This is a mandatory parameter. No VC Profile is created in GID if this parameter is missing.
#ADL_MODE	Selection	IP			Specifies which mode to use for update checks and downloads. Use IP to specify update checks and downloads using IP mode, DIALPPP to use Dial with PPP mode, and DIALNOPPP to use Dial without PPP mode. If DIALPPP mode is selected but the VCS version does not support it yet, the update check will not be performed and a Dial with PPP unsupported error message will be added to the application's log history. The media to be used for the download will follow the media that was used for the update check. Changing this parameter after a successful update check will have no effect on the media to use for the download.

Table 2   AutoDL Configuration Parameters

Parameter Name	Type	Default Value	MIN	MAX	Description
#ADL_PRINT_REPORT	Selection	Y			Specifies if a summary report is to be automatically printed after completing an update check or a download. For a failed update check or download, the summary report is only printed after specified retries, not after each retry. Y: Print summary report. N: Do not print summary report. F: Print summary report but only for failed attempts. U: Print summary report for update check and failed download only. D: Print summary report for download only. Not defined or any other value: Same behavior as "Y"
#ADL_RETRY	Number	2	1	100	Specifies the number of minutes to allocate before AutoDL attempts another update check after a failed previous attempt. Retry applies only to automated update checks. A manual update check using the AutoDL user interface will have no retry.

Table 2   AutoDL Configuration Parameters

Parameter Name	Type	Default Value	MIN	MAX	Description
#ADL_RETRY_DAYS	Number	7	1	365	Specifies the number of times to retry a daily update check or download retry after a failed previous attempt. Set to 0 to disable daily retry. For the daily update check retry, this will be performed at a random time between the update check allowed start and end time. For the daily download retry, this will be performed at the start of the non-business hours. In addition to the number of retry times defined by #ADL_RETRY_DAYS, the daily download retry will only be performed while it is within the download window defined by #ADL_DL_WINDOW.
#ADL_RETRY_LIMIT	Number	3	1	100	Specifies the number of times to retry an update check after a failed previous attempt. An update check request might fail due to the following reasons: • Connection failure between AutoDL and VCS and vice versa. • Connection failure between VCS and VeriCentre and vice versa.
#ADL_SCHED_OVERRIDE	Selection				Specifies the download schedule to override the download schedule from an update check. Possible values are: • 1: Immediate download • YYYYMMDDHHMMSS: Download on a specified date following this format.

Table 2   AutoDL Configuration Parameters

Parameter Name	Type	Default Value	MIN	MAX	Description
#ADL_SKIP_NEW_INSTALL_DLD	Selection	None			Specifies if immediate download on new installation of AutoDL is to be skipped. Include this parameter during AutoDL installation with value set to 1 so that the immediate download on new installation will not be performed.
#ADL_SUCCESS_MSG	String	None			Specifies a custom message in the summary report for a successful update check. The maximum length is 128 characters.
#ADL_SUCCESS_MSG_DLD	String	None			Specifies a custom message in the summary report for a successful download. The maximum length is 128 characters.
#ADL_TERM_ID	String	Return value of call to OS function SVC_INFO_SERLNO()			Used by AutoDL to provide the terminal with a unique identifier which is used for the terminal ID field when an update check is performed and for the *ZT parameter when a download request is performed. The maximum length is 15 characters.
#ADL_NEW_FORMAT	Selection	1			Specifies which format of AutoDL to use. Set the value to 1, to use the new AutoDL format. Set the value to 2 to use the AutoDL 1.0 format.

Table 2   AutoDL Configuration Parameters

Parameter Name	Type	Default Value	MIN	MAX	Description
#ADL_ON_NON_SSL	Selection	NO			Specifies AutoDL behavior when the #ADL_USE_SSL parameter is set to BOTH or DL but the VCS version does not support SSL. Set the parameter value to GO to proceed with the update check or download without using SSL. Set the parameter to NO to prevent AutoDL from performing an update check or download and update the log history with an SSL not supported error message.
#ADL_USE_SSL	Selection	NO			Specifies whether or not to use the SSL protocol, instead of TCP/IP, when performing update checks and downloads. Set the value to NO to avoid using SSL, to BOTH to use SSL for update checks and downloading, and to DL to use SSL for downloading only.
#ADL_HOST_PORT	Number	80	1	65535	Specifies VeriCentre port to which AutoDL must connect to perform update checks. This is a mandatory parameter which must be specified before starting an update check. The connection fails if the port number is incorrect. This parameter should be set to the port number in ISS for the default web site. If #ADL_MODE is set to "DIALNOPPP", then the value of this parameter in ISS Web Server and in Verix eVo AutoDL must be set to 80 due to a limitation in VeriCentre. This parameter must *not* be of the same value as that of #ADL_DL_HOST_PORT.

Table 2   AutoDL Configuration Parameters

Parameter Name	Type	Default Value	MIN	MAX	Description
#ADL_DL_HOST_PORT	Number	8013	1	65535	Specifies the VeriCentre port number that AutoDL will use to perform the download. This parameter is only used when the download port is not specified in the response from an update check.
#ADL_HOST_URL	String	0.0.0.0			Specifies the URL of the VeriCentre machine. AutoDL connects to this URL (VeriCentre) to check for any updates for the terminal. The value can be an IP Address or a URL up to 31 characters in length. This is a mandatory parameter which must be specified before starting an update check. The connection fails if the IP address or the URL is incorrect.
#ADL_DL_HOST_URL	String	0.0.0.0			Specifies the VeriCentre IP address in dotted decimal format that AutoDL will connect to and perform the download. The value can be an IP address or a URL up to 31 characters in length. This parameter is only used when the download IP address is not specified in the response from an update check.
#ADL_DIAL_PREFIX	String	None			Specifies the dial prefix that will be merged with the phone number when AutoDL dials out to perform an update check or download. The maximum length is 30 characters. The valid characters are digits 0 to 9, *, #, ;, comma or space.

Table 2   AutoDL Configuration Parameters

Parameter Name	Type	Default Value	MIN	MAX	Description
#ADL_HOST_PHONE	String	None			Specifies the phone number of the VeriCentre host where AutoDL will perform an update check. The maximum length is 30 characters. The valid characters are digits 0 to 9, *, #, ;, comma or space.
#ADL_DL_HOST_PHONE	String	None			Specifies the phone number of the VeriCentre host where AutoDL will perform the download. The maximum length is 30 characters. The valid characters are digits 0 to 9, *, #, ;, comma or space.
#ADL_START_TIME	String	00:00			Specifies the start time of the period during the day when scheduled update checks can happen. Non-business hours are preferred as the best time for any update check. During these non-business hours, AutoDL selects random time and sends an update check request to VCS. If any of these variables are not downloaded to the terminal in GID 1, the update check time is considered as any time during the 24 hours ("HH:MM") of the day.
#ADL_DL_START_TIME	String	22:00			Specifies the start time of the period during the day when scheduled downloads are allowed.

Table 2   AutoDL Configuration Parameters

Parameter Name	Type	Default Value	MIN	MAX	Description
#ADL_END_TIME	String	23:59			Specifies the end time of the period during the day when scheduled update checks can happen. To handle the situation where two VeriCentre hosts schedule a download at the same time, a minimum download interval from start time to end time will be implemented. If there is at least one VeriCentre profile that is in Dial mode, the minimum interval will be 60 minutes. Otherwise, the interval will be 20 minutes.
#ADL_DL_END_TIME	String	05:00			Specifies the end time of the period during the day when scheduled downloads are allowed. To handle the situation where two VeriCentre hosts schedule a download at the same time, a minimum download interval from start time to end time will be implemented. If there is at least one VeriCentre profile that is in Dial mode, the minimum interval will be 60 minutes. Otherwise, the interval will be 20 minutes.
#ADL_RECV_TIMEOUT	Number	60			Specifies the update check response timeout, in seconds, for IP, Dial with PPP, and GSM with PPP connection.
#ADL_DIAL_RECV_TIMEOUT	Number	60			Specifies the update check response timeout, in seconds, for Dial without PPP and GSM without PPP connection.
*ZINIT	String	None			This is an OS `config.sys` variable and is used to specify the modem init string during download and update check in Dial without PPP.

Table 2   AutoDL Configuration Parameters

Parameter Name	Type	Default Value	MIN	MAX	Description
#ADL_MEDIATYPE	Selection	AutoDL will try to determine the terminal's IP-based media type. If AutoDL cannot recognize the media type, it will assume WIFI.			Sets the IP-based media type parameter in the update check request sent to VeriCentre. Possible values are: • ETHERNET • GPRS
#ADL_DIALPPPSUPP	Selection	AutoDL will try to determine whether VCS supports dial with PPP communication using the terminal model. If AutoDL cannot recognize the terminal model, it will assume dial with PPP is supported.			Configures AutoDL whether the installed VCS supports dial communication. Possible values are: • 0: Dial communication is not supported • 1: Dial communication is supported
#ADL_PASSWD	String	Z66831			Specifies the password protection used in AutoDL's user interface. This parameter can only reside in GID 1. Password is not case sensitive. The minimum length is 5 and the maximum length is 10 characters.
#ADL_RUN_LATENT	Number	None	0	9	Specifies the VMAC latent settings of AutoDL. The value will be assigned to the numeric key for activating AutoDL from the VMAC menu. When a value is not found, AutoDL will run as a non-latent application.

Table 2   **AutoDL Configuration Parameters**

Parameter Name	Type	Default Value	MIN	MAX	Description
#ADL_MENU_IDLE_TIME	Number	60	15	180	Specifies the idle timer which will be active while in a sub-menu screen, a data entry screen, or a message screen. When the idle timer elapses, AutoDL will automatically return to the AutoDL main menu. Set to 0 to disable menu idle time.
#ADL_VMAC_IDLE_TIME	Number	120	15	300	Specifies the idle timer which will be active while in the AutoDL main menu. When the idle timer elapses, AutoDL will automatically release the console device and return to the VMAC menu. Set to 0 to disable VMAC idle time.
#ADL_ERROR_BEEP	Selection	1			Specifies if a beep is to be performed when user enters an invalid input.
#ADL_ALWAYS_SHOW_PROFLIST	Selection	0			Used to display or hide the VC Profile List screen when there is only one VC Profile in the terminal. • 0: VC Profile List screen is hidden. • 1: VC Profile List screen is displayed.

NOTE

For numeric types:

- If the configured value is greater than MAX, the value is set to MAX.

- If the configured value is less than MIN, the value is set to MIN.

- If the configured value contains non-numeric characters, the value is set to DEFAULT (for system mode edit) or the PREVIOUS VALUE (for UI edit).

For string types, if the configured value is greater than the maximum allowed length, the value is truncated.

For selection types, if the configured value is not valid, the value is set to DEFAULT (for system mode edit) or its PREVIOUS VALUE (for UI edit).

Since download of updates are usually carried out during non-business hours, the merchant must ensure that the terminals are powered on and are connected to the network during this time.

If the value of (#ADL_DL_RETRY x #ADL_DL_RETRY_LIMIT) is greater than the value of #ADL_DL_WINDOW, then #ADL_DL_RETRY and #ADL_DL_RETRY_LIMIT is set to its default value.

NOTE

There is a temporary variable, #ADL_MORE_PENDING, that AutoDL and VeriCentre uses to keep track of multi-session downloads. Users should not edit this variable as it is automatically managed by AutoDL and VeriCentre. This variable can only be found in GID 1.

- A value of 1 indicates that there are still pending downloads and AutoDL proceeds with the download.

- A value of 0 indicates that there are no pending downloads for AutoDL to perform.

AutoDL User Interface

This chapter describes the AutoDL user interface.

The AutoDL UI options are essentially the same between the VX 520 and the VX 680. On the VX 520, these options are selected using the Function keys (F1 to F4); whereas, on the VX 680, these options are selected directly using the touchscreen interface.

AutoDL Main Menu

Figure 2 below shows the AutoDL main menu with the list of available options. Use PF1 key to scroll through the options. Pressing the CLEAR key changes the direction of the scroll.
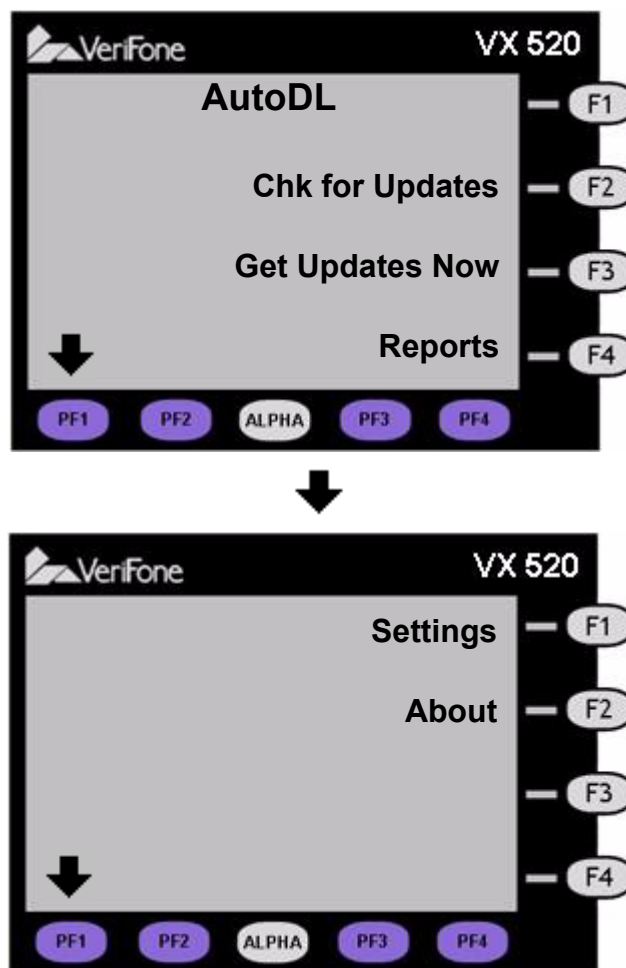
Figure 2   AutoDL Main Menu

The AutoDL main menu contains the following entries:

- Chk for Updates

- Get Updates Now

- Reports

- Settings

- About

Menu Navigation   **1** To select a menu option, use the corresponding function key for each of the menu option.

2 After selecting a menu option (except for the About menu option), you will be asked to enter a password. By default, the password is set to Z66831. You can change this password by using the **Change Password** option (see Change Password section) from the Settings menu.

Figure 3 shows the password screen with <Menu Option> pertaining to the option selected.
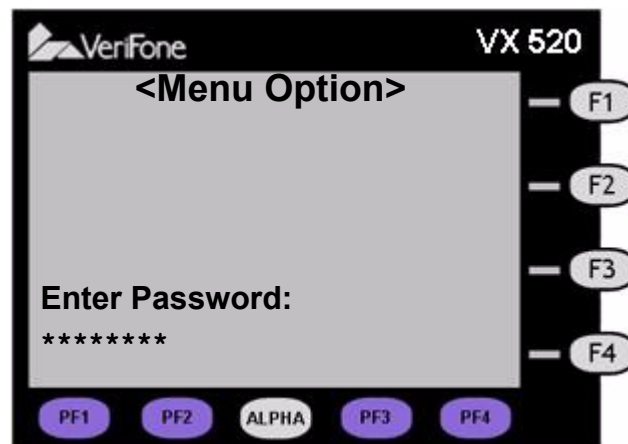
Figure 3   Password Screen with <Menu Option>

3 Enter the password and press ENTER.

NOTE

Press the CANCEL key to go back to a previous menu.

VeriCentre Profile Limiting   Because of optimizations in AutoDL's usage of RAM memory, only the first five (5) VeriCentre profiles will be used by AutoDL.

Settings

The Settings menu (see Figure 4) allows the user to modify AutoDL configurations.

The user will be prompted to enter the password when Settings is selected from the AutoDL main menu. After entering the correct password, the user will be presented with the Settings menu screen.

The Settings menu contains the following options:

- VC Profile Setup
- Common Settings
- Change Password
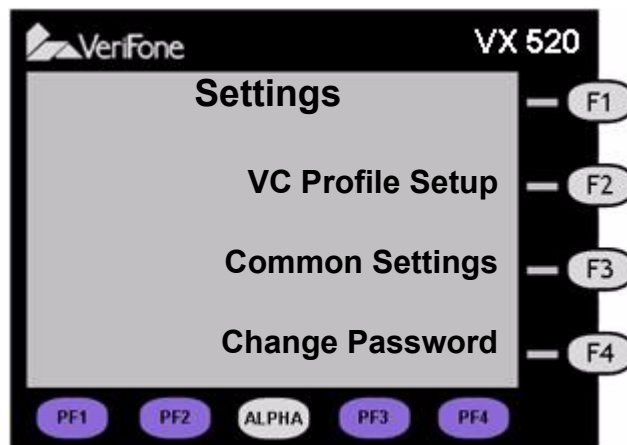
Figure 4   Settings Menu

VC Profile Setup

This option allows the user to update VeriCentre Information through the user interface. The user can select and edit each of the saved VC profiles listed under this option. The VC Profile Setup menu (see Figure 5) opens from the Settings menu with the list of available VC profiles saved in the terminal:
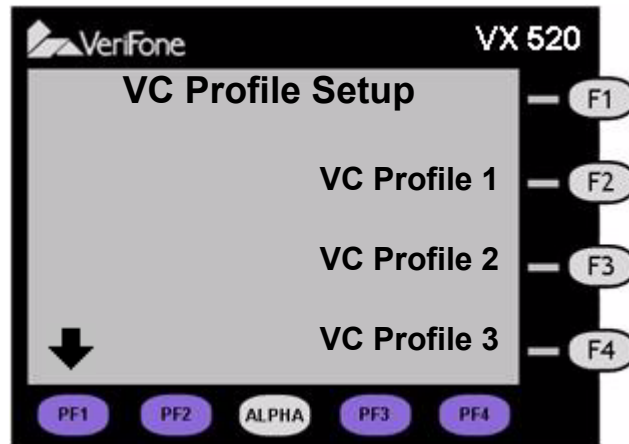
Figure 5   VC Profile Setup Menu

Use the function keys to select a VC profile to view or edit.

When there is only one saved VC profile, the selection of VC profile is skipped and editing can be immediately performed on the only existing VC profile.

When multiple profiles are being set up, all the parameters that are in the first VC profile (VC Profile 1) must be set up in GID 1.

VC Profile Options   After a profile has been selected, the VC Profile screen opens with the following
options:
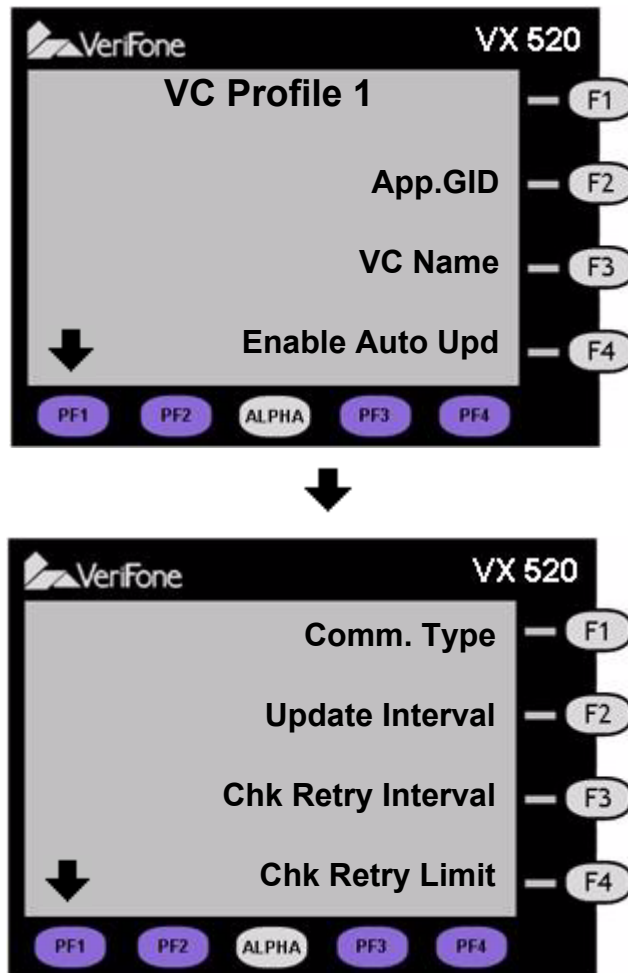
Figure 6   **VC Profile Setup Screen Transition**
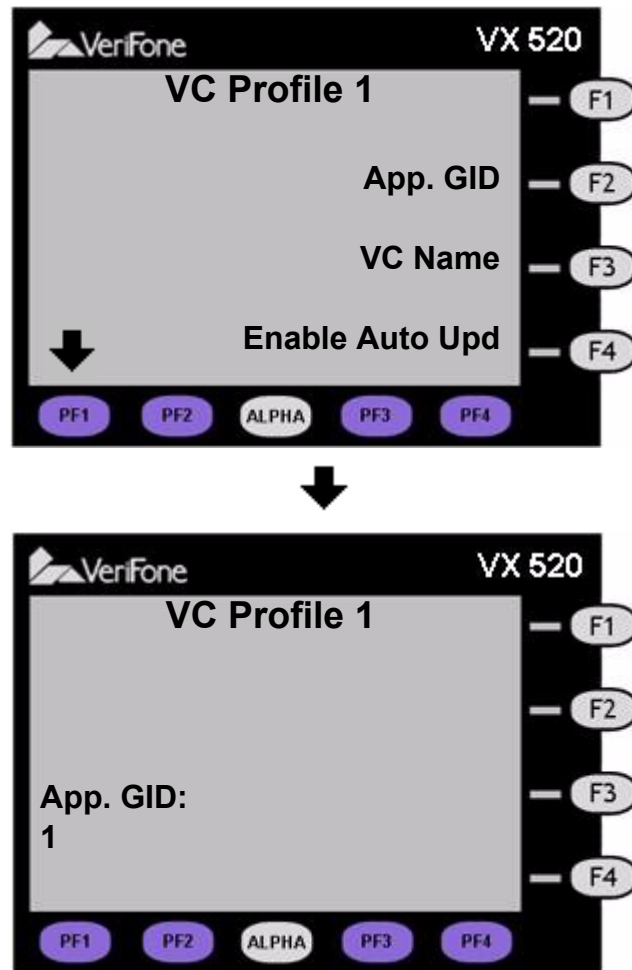
Figure 7   VC Profile Data Entry Screen Transition

App. GID is a mandatory field which refers to the GID where the VC Profile is saved.

VC Name, used to edit the parameter #ADL_HOST_NAME, represents the logical name of the VeriCentre host that appears in the Select Profile menu. If the field is left blank, the name **VC Profile**, combined with the APP GID, will be assigned to the profile. Examples of these are VC Profile 1 or VC Profile 2.

Enable Auto Upd, used to edit the parameter #ADL_DLD_ENABLE, represents a flag to indicate whether or not automated downloading is enabled. The values are either:

- 1: if enabled
- 0: if not enabled

Comm. Type, used to edit the parameter #ADL_MODE, indicates the type of communication to be used. It can be one of the following values:

- IP: IP communication

- DIALPPP: Dial with PPP communication

- DIALNOPPP: Dial without PPP communication

- GSMPPP: GSM with PPP communication

- GSMNOPPP: GSM without PPP communication

Update Interval, used to edit the parameter #ADL_CHK_INTERVAL, specifies the frequency of the update check initiated by AutoDL for the selected VeriCentre host if the last updated check was successful. The specified value is in days. If no value is entered, the default values of 3 days for AutoDL IP and 30 days for AutoDL Dial will be used.

Chk Retry Delay, used to edit the parameter #ADL_RETRY, specifies the time interval in minutes, before making another update check if the last update check was missed.

Chk Retry Limit, used to edit the parameter #ADL_RETRY_LIMIT, indicates the number of retry attempts for failed update checks. If no value is specified, the default value of 3 will be used.

DL Retry Delay, used to edit the parameter #ADL_DL_RETRY, refers to the time interval in minutes, before retrying to download updates.

DL Retry Limit, used to edit the parameter #ADL_DL_RETRY_LIMIT, specifies the maximum number of times to retry downloading after previous failed attempts.

Retry Days, used to edit the parameter #ADL_RETRY_DAYS, specifies the number of times to retry a daily update check or download after a failed previous attempt.

Terminal ID, used to edit the parameter #ADL_TERM_ID, represents the unique terminal identifier assigned to the terminal ID field of the update check request and the *ZT parameter of the download request. The default value is the terminal's manufacturing serial number.

GIDs to Check, used to edit the parameter #ADL_GIDS_TO_CHECK, refers to a comma-separated list of GIDs. AutoDL will only check applications residing in these GIDs if a download is to be allowed. If the value is invalid or not specified, AutoDL will check applications residing in all GIDs.

Timeout Behavior, used to edit the parameter #ADL_DL_ON_TIMEOUT, indicates the behavior of AutoDL when an application does not respond to a download allowed check. The following values can be specified:

- GO: If the download is to be allowed when there is no response from the application

- NO: If the download is not to be allowed when there is no response from the application

Download Window, used to edit the parameter #ADL_DL_WINDOW, refers to the time interval (or allowance), in minutes, from the beginning of the download schedule, when the download will be allowed.

If the download schedule is set to 12:00 and the download window is set to 30 minutes, the download will no longer be performed if the terminal is switched on and connected to a VeriCentre host after 12:30.

Summary Report, used to edit the parameter #ADL_PRINT_REPORT, specifies if a summary report is to be automatically printed after completing an update check or a download. For a failed update check or download, the summary report is only printed after the specified retries and not after each retry. The values are as follows:

- Y: Print summary report.
- N: Do not print summary report.
- U: Print summary report for update check and failed download only.
- D: Print summary report for download only.
- F: Print summary report but only for failed attempts.
- Not defined or any other value: Same behavior as Y.

IP Mode

The following fields are used if AutoDL communicates with VeriCentre in IP Mode:

Use SSL, used to edit the parameter #ADL_USE_SSL, indicates whether or not AutoDL will support SSL for the specified VeriCentre Host. The values are as follows:

- NO: Do not use SSL

- BOTH: Use SSL for update check and download

- DL: Use SSL for download only

Update Chk URL, used to edit the parameter #ADL_HOST_URL, refers to the URL of the VeriCentre host where AutoDL will connect to perform the update check. The value can be specified in dotted decimal (IP Address) or URL.

Update Chk Port, used to edit the parameter #ADL_HOST_PORT, indicates the VeriCentre port number where the update check will be made.

Download URL, used to edit the parameter #ADL_DL_HOST_URL, refers to the URL of the VeriCentre host where AutoDL will connect to perform the download. The value can be specified using the dotted decimal (IP Address) or URL itself. This option will only be used if the download URL is not included in the update check response.

Download Port, used to edit the parameter #ADL_DL_HOST_PORT, indicates the VeriCentre port number where the download will be performed. This will only be used if the download port is not included in the update check response.

DIAL Mode

The following fields are used if AutoDL will communicates with VeriCentre in DIAL mode:

Dial Prefix, used to edit the parameter #ADL_DIAL_PREFIX, indicates the number that will be prefixed to Upd Chk Phone or Download Phone when AutoDL performs an update check or download.

Upd Chk Phone, used to edit the parameter #ADL_HOST_PHONE, refers to the phone number of the VeriCentre host that AutoDL will call to perform the update check.

Download Phone, used to edit the parameter #ADL_DL_HOST_PHONE, refers to the phone number of the VeriCentre host that AutoDL will call to perform the download. This will only be used if the download phone number is not included in the update check response.

> **NOTE**
>
> If an invalid value is entered, the user will be notified with an error message and a beep, and the previous valid entry will be displayed.
>
> If the value entered is null or outside the valid range, the user is notified and one of the following is performed:
>
> • For numeric types, if the value entered is greater than MAX or less than MIN, the value is set to the MAX and MIN, respectively.
>
> • For numeric and string types, if the value entered is NULL, the value is set to default.

Figure 8 shows an example of a VC Profile Data Entry screen with an error message when the GID entered is invalid.
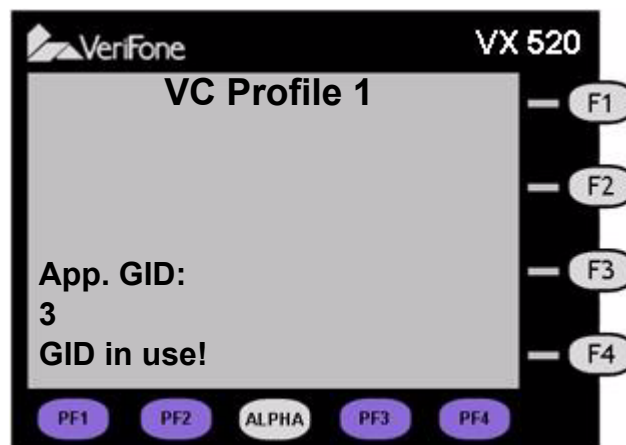
Figure 8   Error Message When GID Entered is Invalid

Common Settings

This option allows the user to edit the download and update check times, latent key, menu and VMAC idle times of AutoDL. The Common Settings menu (see Figure 9) opens from the Settings menu with the following options:
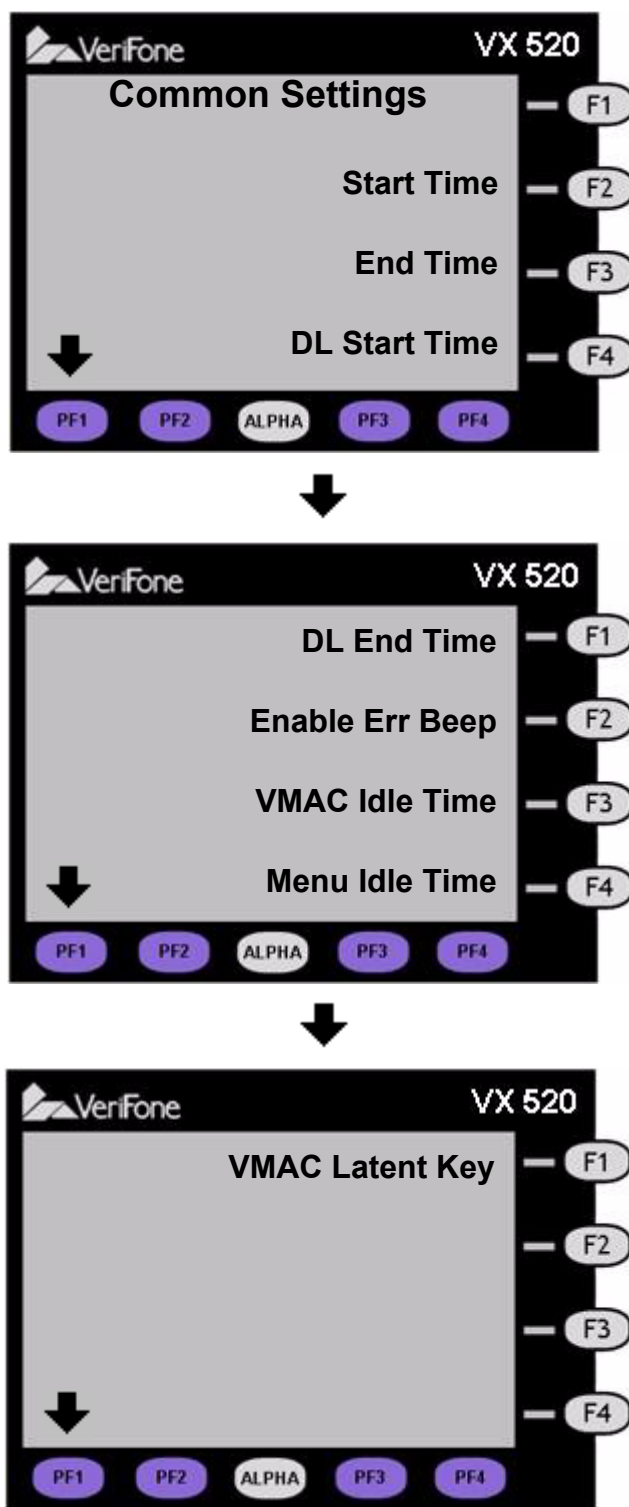
Figure 9   Common Settings Screen Transition
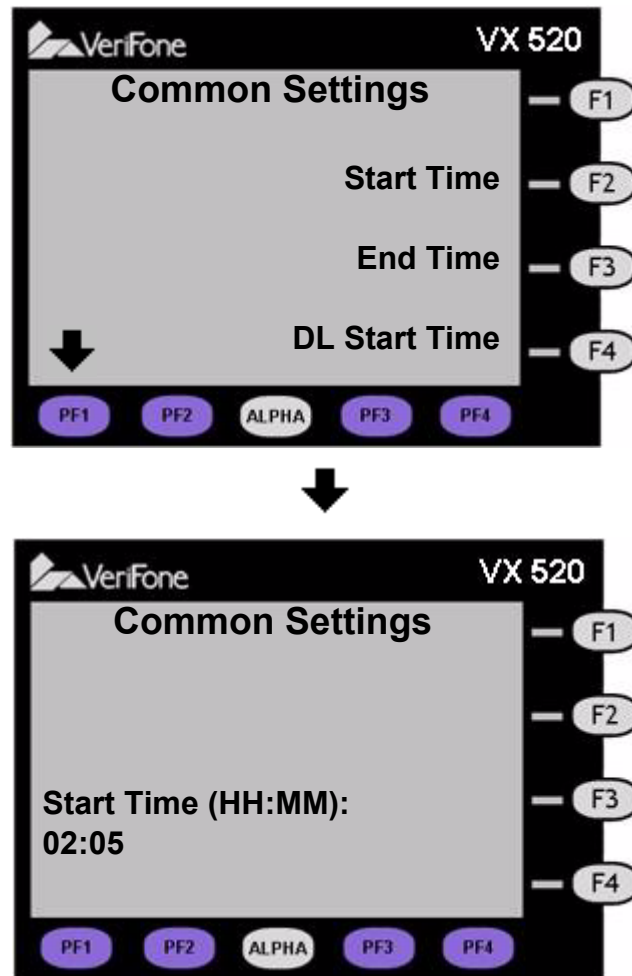
Figure 10   Common Settings Data Entry Screen

Default values are displayed when you select these options. However, you can change these values to suit your requirements.

Start Time, used to edit the parameter #ADL_START_TIME, refers to the start of the time period when update checks can be performed. The time value must be specified in the 24-hour format (HH:MM).

End Time, used to edit the parameter #ADL_END_TIME, refers to the end of the time period when update checks can be performed. The time value must be specified in the 24-hour format (HH:MM).

NOTE

Start Time and End Time is used to define specific time period for AutoDL to randomly perform an update check. If Start Time is set to 1:00 and End Time to 5:00, AutoDL will perform an update check at any random time between 1:00 and 5:00.

DL Start Time, used to edit the parameter #ADL_DL_START_TIME, refers to the start of the time period when downloads may be performed. The time value must be specified in the 24-hour format (HH:MM).

DL End Time, used to edit the parameter #ADL_DL_END_TIME, refers to the end of the time period when downloads may be performed. The time value must be specified in the 24-hour format (HH:MM).

NOTE

Download start and end times are usually set at the start and end of non-business hours.

Enable Err Beep, used to edit the parameter #ADL_ERROR_BEEP, specifies if the error beep is enabled or disabled:

• 1: If enabled

• 0: If not enabled

VMAC Idle Time, used to edit the parameter #ADL_VMAC_IDLE_TIME, specifies the idle time interval in seconds before AutoDL returns to VMAC Frontend menu when idle in the AutoDL main menu.

Menu Idle Time, used to edit the parameter #ADL_MENU_IDLE_TIME, specifies the idle time interval in seconds before AutoDL returns to the AutoDL main menu when idle in a sub-menu.

VMAC Latent Key, used to edit the parameter #ADL_RUN_LATENT, specifies the VMAC latent settings of AutoDL. The value will be assigned to the numeric key (0-9) for activating AutoDL from the VMAC menu. If the value is left blank, AutoDL will run as a non-latent application.

NOTE

If an invalid value is entered, the user will be notified with an error message and a beep, and the previous valid entry will be displayed.

Figure 11 shows an example of a Common Settings Data Entry screen with an error message when Start Time entered is invalid.
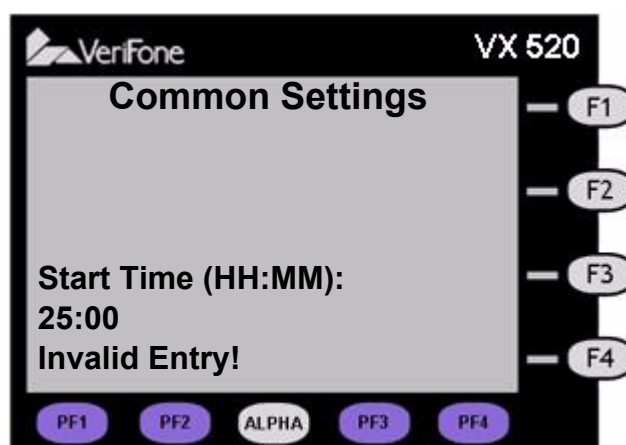
Figure 11   Error Message When Start Time Entered is Invalid

Chk for Updates

This option is used to check for updates using the information stored from the selected VC profile. When selected from the AutoDL main menu, the Chk for Updates menu (see Figure 12) opens with the list of available VC profiles saved in the terminal:
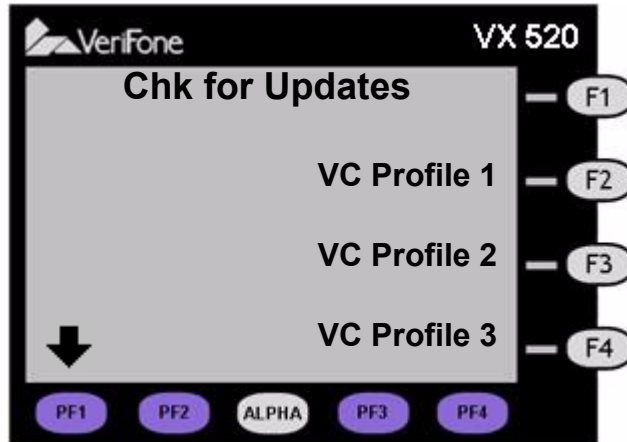
Figure 12   Chk for Updates Menu

Use the function keys to select a VC profile that will perform a check for updates. AutoDL then contacts the VeriCentre host using the information stored in the selected VC profile and checks if there are available updates.

The Chk For Updates result screen will then be displayed showing the following information: VC Name, Upd Chk URL/Upd Chk Phone, Result, and DL schedule/ Error (successful/failed update check).
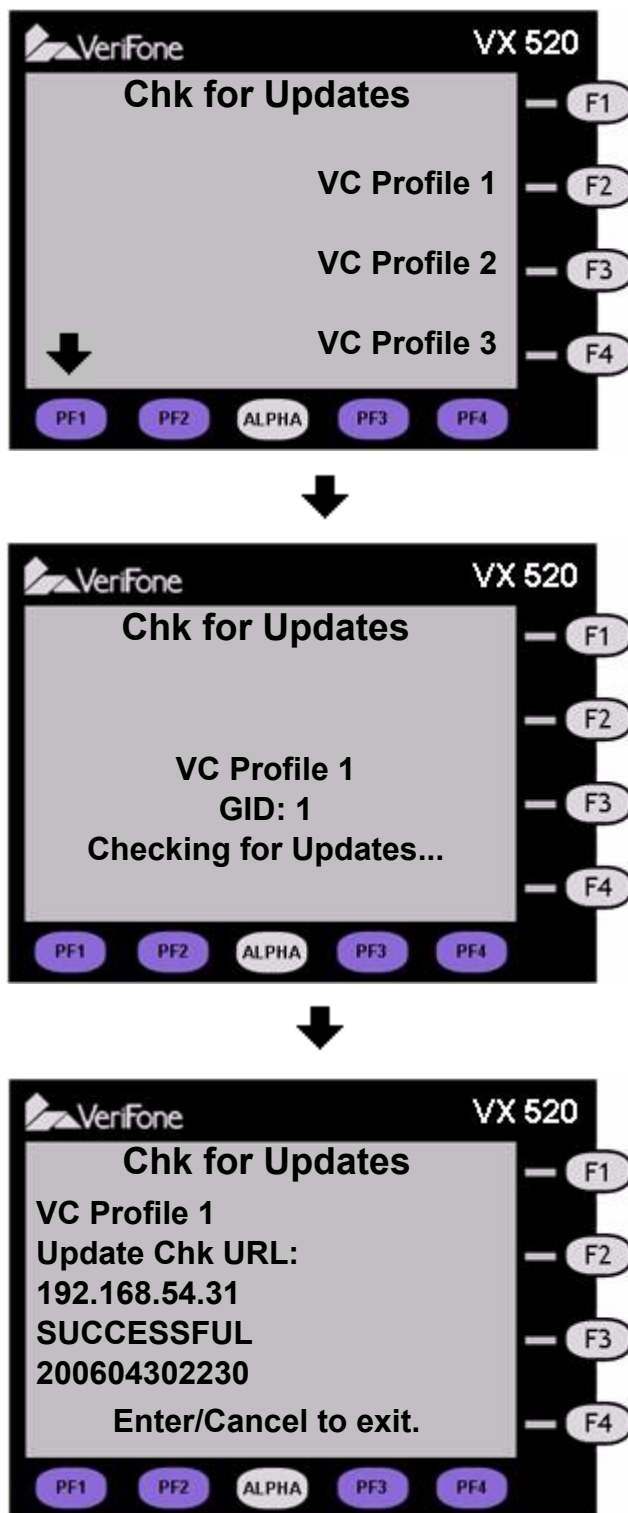
Figure 13   Chk for Updates Screen Transition

At the Chk Result screen, sometimes only a portion of the result is displayed when the error message is too long. Press the PF2 key to view the rest of the result.

If the update check is successful and a download schedule is retrieved, AutoDL will perform a download based on the assigned schedule.

If the update check fails, no retry will be performed. Retry is only applicable to automated update checks.

When there is only one saved VC profile, the selection of the VC profile is skipped and the update check is immediately performed on the existing VC profile.

NOTE

If the value retrieved for the download schedule is 000000000000, the download will be performed immediately.

Get Updates Now

This option is used to perform an immediate download using the information stored from the selected VC profile. When selected from the AutoDL main menu, the Get Updates Now menu (see Figure 14) opens with a list of the available VC profiles saved in the terminal.
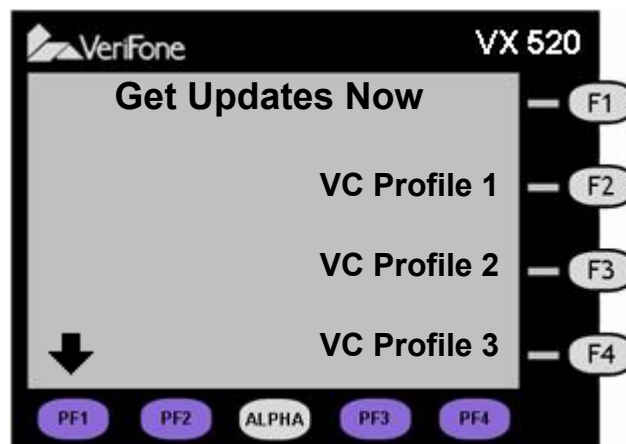
Figure 14   Get Updates Now Menu

Use the function keys to select a VC profile that will perform an immediate download. Then, Verix eVo AutoDL performs the download using the information stored in the selected VC profile. The Get Updates Now Result screen will be displayed showing the following information: VC Name, Download URL/Download Phone, Result, and Error (successful or failed update check).
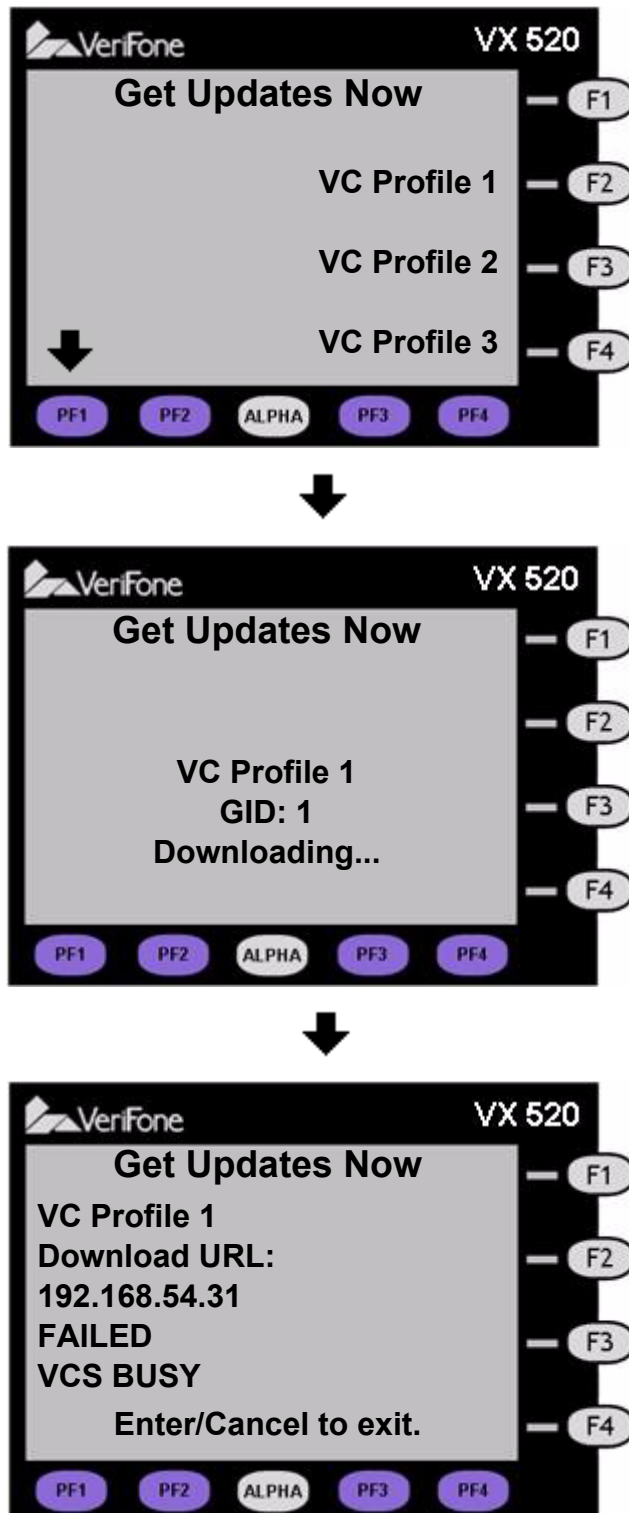
Figure 15   Get Updates Now Screen Transition

At the Dld Result screen, sometimes only a portion of the result is displayed when the error message is too long. Press the PF2 key to view the rest of the result.

If the download fails, no retry will be performed. Retry is only applicable to the scheduled download.

When there is only one saved VC profile, the selection of VC profile is skipped and the download is immediately performed on the only existing VC profile.

When the download is successful and a download schedule exists, the scheduled download will no longer be performed.

On successful download, "Disconnecting from network..." and "Restarting..." messages will be displayed prior to restarting terminal.

Reports

The Reports menu allows the user to print logs.

The user will be prompted to enter the password when Reports is selected from the AutoDL main menu. After entering the correct password, the user will be presented with the Reports menu (see Figure 16).
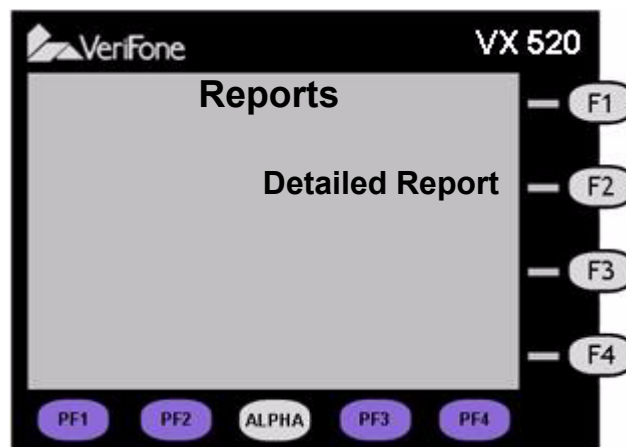
Figure 16   Reports Menu

NOTE

As of now, the menu contains only one (1) item, Detailed Report.

Detailed Reports   AutoDL allows printing of configuration settings and last update check and download for selected VC profiles or a full report for all saved VC profiles

When you select the Detailed Report option from the Reports menu, the user will be presented with the Print Full Report option and the list of VC profiles:
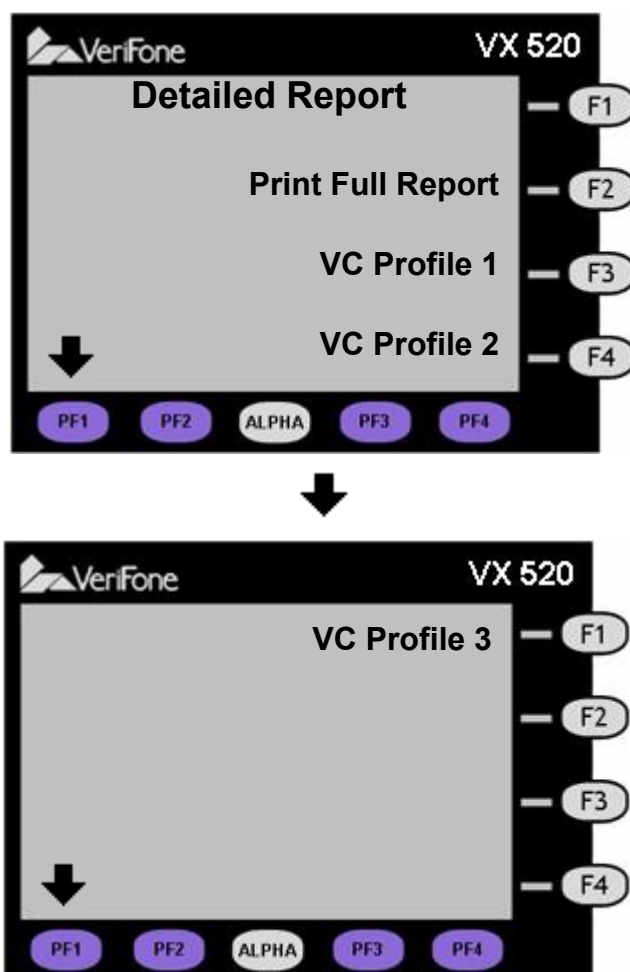
Figure 17   Detailed Report Menu

Press the corresponding function key to print a report for a specific VC host. Select **Print Full Report** to print all host data stored on the terminal.

When there is only one saved VC profile, the selection of the VC profile is skipped and the log reporting is immediately performed on the only existing VC profile.

Log Reports

The reporting tool will be enhanced to allow reporting by VeriCentre host, full reporting of all VeriCentre hosts, and future download schedules. Following is an example of the log file format.

```
                    AutoDL 1.0.0
                    LOG HISTORY
10-SEPT-2007                    17:29:32

Update Check Period : 10:00 - 17:05
Download Period : 15:00 - 17:00

VeriCentre Profile Name : VC PROFILE 1(GID 2)
Automated Download : Enabled
Communication Mode : IP
Update Check Interval : 1 Day
Terminal ID : VX 520
GIDs to Check : 2,5,7,11
New Check Format : Yes
Update Check URL : 10.64.31.159
Update Check Port : 80
Download URL : 10.64.31.159
Download Port : 8013
Using SSL : Both
Update Check Phone : 6329141220
Download Phone : 6329141221
Update Check Retry Max : 3
Update Check Retry Time : 2 min(s)
Download Retry Max : 3
Download Retry Time : 2 min(s)
Retry Days : 3
Download Window : 60 mins
Last Update Check
   Date & Time : 09-SEPT-2007 & 17:01
   Response         : 00000000000000
   Type             : SCHEDULED
   Retry            : N/A
   Retry Days       : N/A
   Schedule Override : 200911201300

Last Download Success
   Date & Time : 05-SEPT-2007 & 22:23
   Type             : SCHEDULED
   Response         : DOWNLOAD SUCCESSFULL
   Schedule Override : 200911201300

Last Download Failure
   Date & Time : 09-SEPT-2007 & 22:05
   Type             : SCHEDULED
   Reason           : CONNECTION FAILED
   Retry            : 3
   Retry Days       : N/A
   Schedule Override : 200911201300
```

Figure 18   AutoDL Log Report

For any errors displayed during update checks or found in the log history, please refer to the Error Messages section of this document.

NOTE	The date format is DD-MON-YYYY and the time format is HH:MM.

The GID location of the VC profile is appended to the VeriCentre Profile Name inside open and close parentheses.

The Retry field under the Last Update Check or Last Download Failure can contain any of the following values:

- N/A - The VC Profile is not in retry mode.

- 0 (for download only) - The VC profile is performing the first download.

- Value > 0 - Indicates that the last update check or download has failed and is doing a retry.

Summary Reports

A summary report, which is automatically printed after every update check or download, will be added. Please refer to the `#ADL_PRINT_REPORT` config.sys parameter to configure AutoDL to perform automatic summary report printing.

Below is an example of the summary report format:

```
                AutoDL 1.0.0
              SUMMARY  REPORT
10-SEPT-2007              17:29:32


VeriCentre Profile Name : VC PROFILE 1(GID 2)
AutoDL Task: AUTOMATED DOWNLOAD
Communication Mode : IP
IP Address or URL  : 10.64.31.159
Port               : 8013
Using SSL          : Both
Terminal ID        : VX670
Response           : CONNECTION FAILED
Custom Message     : PLEASE CALL VERIFONE
   CUSTOMER SERVICE AT 1800-8888-8888
```

Figure 19   AutoDL Summary Report

NOTE	The date format is DD-MON-YYYY and the time format is HH:MM.

The GID location of the VC profile is appended to the VeriCentre Profile Name inside open and close parentheses.

The AutoDL Task can either be Manual Update Check , Automated Update Check , or Automated Download.

The Custom Message displayed depends on whether an update check or download operation.

For an update check, the success/failure message dispayed is either `#ADL_SUCCESS_MSG` or `#ADL_FAILURE_MSG`. For the download operation, the message displayed is either `#ADL_SUCCESS_MSG_DLD` or `#ADL_FAILURE_MSG_DLD`.

Change Password

Select this option from the Settings menu to change the existing password. The default password is Z66831.
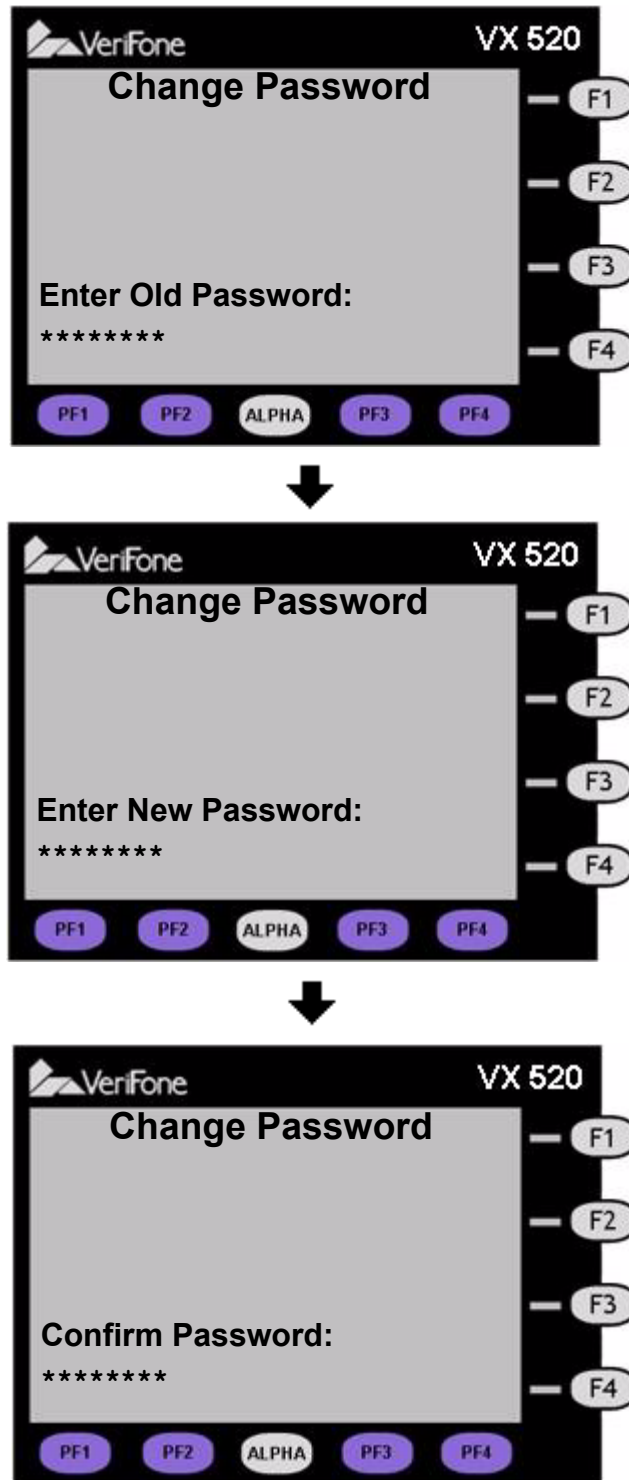
Figure 20   Change Password Data Entry Screen Transition

Old Password requires the user to enter the old password.

New Password specifies the new password.

Confirm Password requires the user to re-enter the new password to confirm.

About   Select the **About** option from the AutoDL main menu to view the current version of AutoDL running on the terminal.
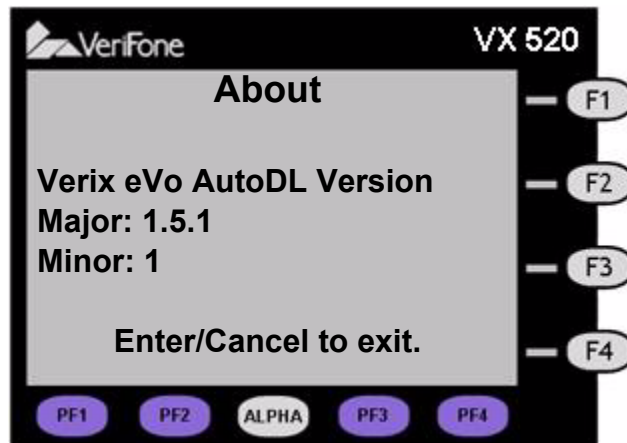
Figure 21   About Screen

Download Confirmation   A download confirmation screen is displayed for the following instances:

• A scheduled download is about to happen during business hours (time between DL End Time and DL Start Time).

• Immediate download on new install is to be performed.
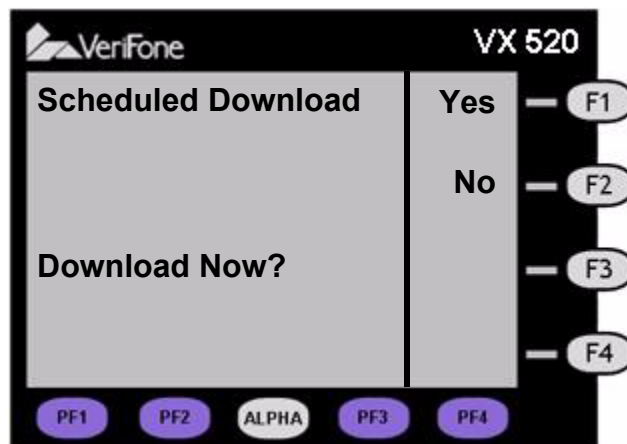
Figure 22   Scheduled Download Yes/No Screen

Use the F1 and F2 keys to select a choice.

• If YES, download is performed immediately.

• If NO and confirmation is for download during business hours, the download is moved to the next non-business hour.

• If NO and confirmation is for immediate download on new install, an update check is performed at a random time during the next update check time.

The default behavior is set to YES. The download is triggered when either Verix eVo AutoDL is not able to acquire the console and display the prompt, or when a choice is not made within one minute. The "AUTOMATED DOWNLOAD IN PROGRESS" message is displayed on the screen.

NOTE	VeriCentre always gives a download schedule within non-business hours. Scheduled download that happens during business hours can happen when the terminal is powered-off during the actual download schedule and has been restarted only during business hours. The "AUTOMATED DOWNLOAD IN PROGRESS" message is printed when Scheduled download happens during business hours.

VX 680 AutoDL UI Screen Orientation

In the VX 680 there are four (4) types of screen displays, these are:

- Menu screen
- Data Entry screen
- List screen
- Result screen

Menu Screen

Menu screens display a list of options the user can select. Figure 23 shows a sample menu.
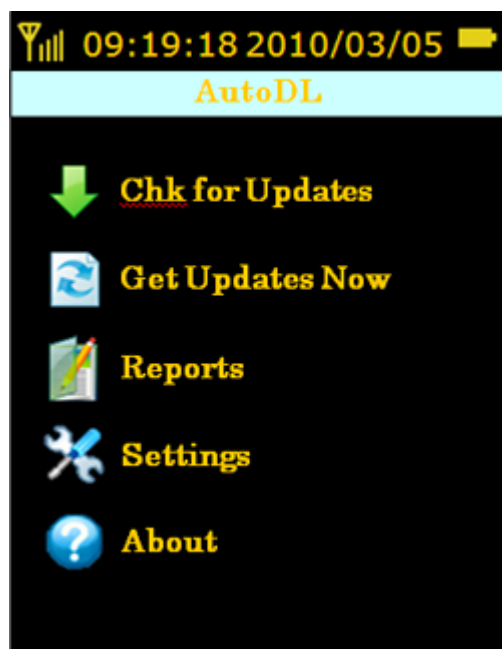
Figure 23   Main Menu

The Reports and Settings options have a sub-menu. Sub-menus further list options that a user can select. Figure 24 shows a sample sub-menu.
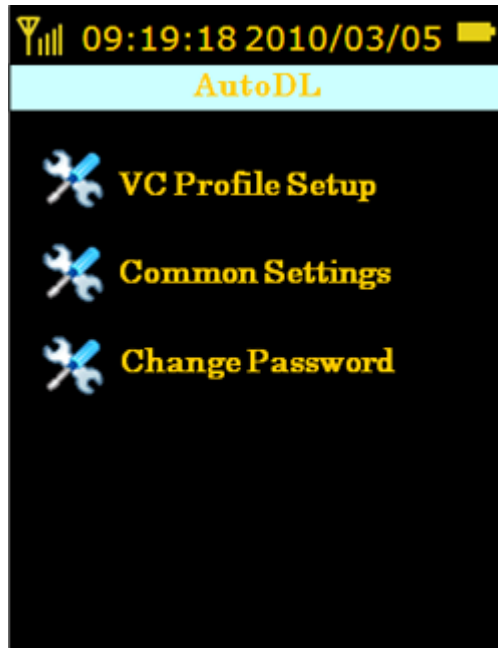
Figure 24   Settings Sub-menu
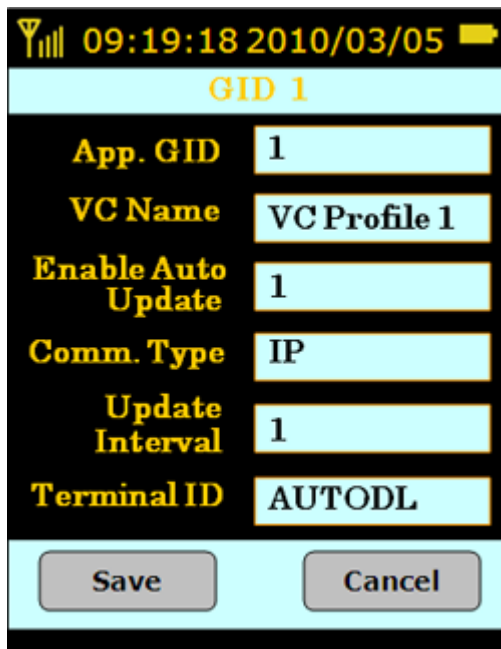
To return to a previous menu from a sub-menu, press the CANCEL key on the terminal keypad.

Data Entry Screen   Data Entry screens either let users enter new values, edit existing values, or just view current values. The screen can display up to six (6) items at a time. The user can tap and drag upwards along the scrollable area of the screen to show the rest of the items.

To edit a value, the user must click on the input box and a virtual keypad will be displayed. Use the virtual keypad to enter values. When the virtual keypad is displayed, the terminal keypad can be used to enter values in numeric only fields such as retry and port numbers. For alphanumeric fields, the terminal keypad is disabled. Pressing the CANCEL key will remove the virtual keypad.
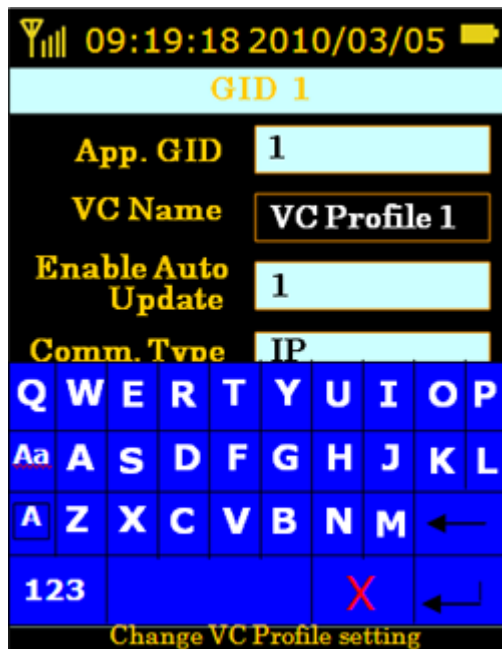
Figure 25 shows a sample of a data entry screen.

Figure 25   Sample Data Entry Screen

Figure 26 shows a data entry screen with the virtual keypad displayed.

Figure 26   Virtual Keypad

Pop-up Message Box with a Button

If an invalid value is entered, the user will be notified with an error message via a pop-up message box and a warning beep. Figure 27 shows a sample pop-up message box with a button.
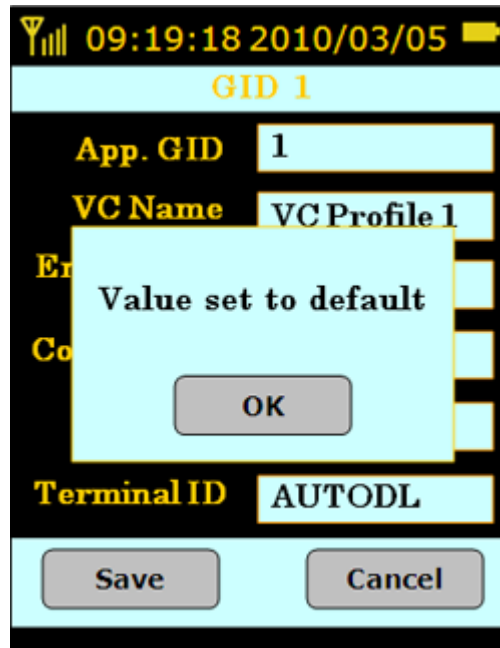
Figure 27   Sample Pop-up Message Box with a Button

Figure 28 shows another example of a pop-up message box with buttons. Before a scheduled download is performed, the user will be prompted by a pop-up message box with options on whether to start the download or not.
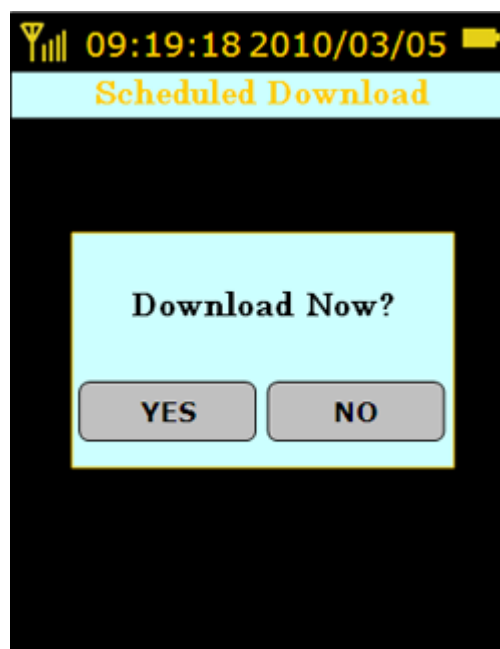
Figure 28   Sample Pop-up Message Box with Buttons

List screen List Screens display a list of items such as VC Profiles available for printing of Detailed Reports. See Figure 29 shows a sample of a List screen.
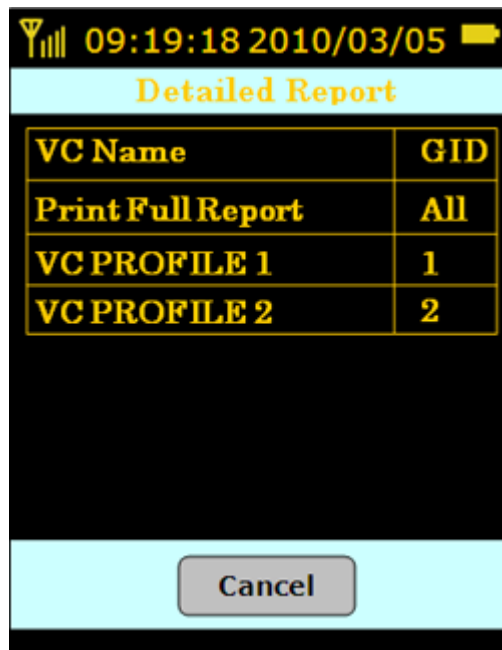
Figure 29   Sample List Screen

Result Screen Result screens display details such as from a Chk for Updates or Get Updates Now transaction. Figure 30 shows a sample of a Result screen.

Figure 30   Sample Result Screen

Pop-up Message Box Without a Button

Downloading or printing status, such as during Get Updates Now, is shown via a pop-up message box without a button. Figure 31 shows a sample of a pop-up message box without a button.
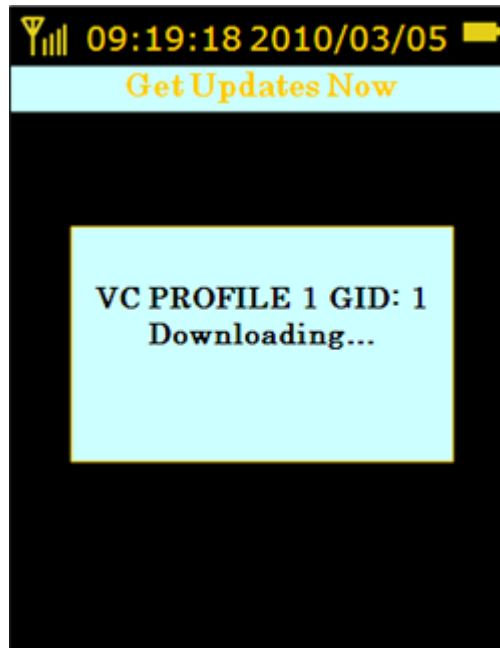
Figure 31   Sample Pop-up Message Box Without a Button

> **NOTE**
>
> For more details on how to navigate the screens please see the AutoDL and VMAC demo application.

Application Download Interface

This chapter describes the communication flow between AutoDL and the applications running on a terminal. It also describes the flow of a scheduled download.

Interface Between AutoDL and Terminal Applications

If updates are available on VeriCentre, AutoDL initiates the application download to the terminal. The following steps describe the download procedure:

1 Before initiating the download, AutoDL sends the `ADL_STARTING_DOWNLOAD` event sequentially to all the applications that reside in GIDs that are defined by the `#ADL_GIDS_TO_CHECK` parameter of the current VC profile and waits for each application to respond. This event indicates that AutoDL is about to start a download.

Example:

If the `#ADL_GIDS_TO_CHECK` parameter is set to "`1,2,5`" then AutoDL will send the `ADL_STARTING_DOWNLOAD` event only to the applications that reside in GIDs 1, 2, and 5 to this terminal.

A VC profile on a terminal corresponds to a particular VeriCentre system. Since a terminal can download applications from multiple VeriCentre systems, it can have multiple VC profiles. Let's consider a scenario where a terminal is set up to download the VMAC, AutoDL, and VCS (CommServer) applications to GID 1 and a Softpay application to GID 2 from one VeriCentre system, say VC1, and a Gift Card application to GID 5 from another VeriCentre system, say VC2. In this case, there will be one VC profile named VC1 stored in GID 1 with `#ADL_GIDS_TO_CHECK` set to "`1,2`" and one VC profile named VC2 stored in GID 5 with `#ADL_GIDS_TO_CHECK` set to "`5`".

2 Applications use the response event `ADL_RESPONSE_DOWNLOAD` to send their response to AutoDL. This event contains a flexi-field called `ADL_RESP` with data either as "`GO`" or "`NO`". To add the `ADL_RESP` field to the response data, use the VMAC function `shVarAddData()`.

`GO` – This is the response event data used by the applications to indicate that they are ready to receive the updates.

`NO` – This is the response event data used by the application to indicate that it is not yet ready to receive the updates. AutoDL, on receiving this response from at least one application, will not perform the download but will retry the download later.

> **NOTE**
>
> Instead of responding to the ADL_STARTING_DOWNLOAD event from AutoDL, an application can also respond to AutoDL and indicate its readiness to receive updates by setting the #ADL_DL_ON_TIMEOUT parameter in its own GID to a value of "GO". It can set this parameter to a value of "NO" if it is not yet ready to receive updates. The #ADL_DL_ON_TIMEOUT parameter can also be defined in the GID where the current VC profile is stored and it will be applicable to all the applications managed by a given VC profile. However, it is important to note that the #ADL_DL_ON_TIMEOUT parameter that is defined in an application's own GID will take precedence over the one that is defined in the current VC profile. If the #ADL_DL_ON_TIMEOUT parameter is not defined in either of the above locations, then a default value of "NO" will be used.

The `#ADL_DL_ON_TIMEOUT` parameter is used by AutoDL only if AutoDL does not receive the `ADL_RESPONSE_DOWNLOAD` event response from a given application within the timeout interval specified by the `#ADL_EVT_RESP_TIMEOUT` parameter. The `#ADL_EVT_RESP_TIMEOUT` parameter has a default value of 5 seconds.

3 After receiving a positive response from the applications, AutoDL begins performing the download. In IP, GSM with PPP, Dial with PPP, and Dial without PPP via Bluetooth using VCS mode, AutoDL will send `VCS_EVT_DL_REQ` event to VCS (Comm Server) to request it to start a download. VCS then connects to VeriCentre and begins the download. For Dial without PPP (normal PSTN or ISDN dial download), and GSM without PPP mode, AutoDL itself will connect to VeriCentre and start the download and VCS is not used in this case.

See the sample code   for handling such events. In the sample code, the application sends "GO" or "NO" to AutoDL on receipt of ADL_STARTING_DOWNLOAD based on the value of the variable shAllowDownload.

```
void vdProcessAdlStartingDownload( void )
{
    ...
    // initialize standard flexi
    vVarInitRecord( recordBuffer, sizeof(recordBuffer), 0 );
    ushInitStandardFlexi( recordBuffer );

    // Update flag if download is to be allowed
    shAllowDownload = shGetAllowDownload();

    // If download is to be allowed
    if( shAllowDownload == 1 )
    {
        shVarAddData( ADL_RESP, "GO", 2 );
    // If download is not to be allowed
    } else {
        shVarAddData( ADL_RESP, "NO", 2 );
    }

    // send response to AUTODL
    shGetRecordLength( recordBuffer, (short*)&shLength );
     EESL_send_event( "AUTODL", ADL_RESPONSE_DOWNLOAD, record-
Buffer, shLength );
}
```

NOTE

AutoDL uses the configuration variable #ADL_DL_ON_TIMEOUT to proceed with the download when an application fails to respond to the ADL_STARTING_DOWNLOAD event from AutoDL. AutoDL will first check for this parameter on the GID where the application resides. If it is not found, it will then check the GID where the current VC profile resides. The #ADL_DL_ON_TIMEOUT parameter that is found on an application's own GID will take precedence over the #ADL_DL_ON_TIMEOUT parameter that is found in the GID where the current VC profile is present. If the #ADL_DL_ON_TIMEOUT parameter is not found in either of these two locations, then AutoDL will assume a default value of "NO" for this parameter. If the #ADL_DL_ON_TIMEOUT parameter has a value of "GO," then AutoDL will assume that this application is okay with going ahead with this download. If it has a value of "NO" or any other value, then AutoDL will consider it as a "NO" response and it will NOT proceed with the download.

Guidelines for Making an Application AutoDL-Compliant

If an application receives the `ADL_STARTING_DOWNLOAD` event from AutoDL, then it has to decide whether to send a "`GO`" or a "`NO`" response to AutoDL in the `ADL_RESPONSE_DOWNLOAD` event.

Some of the guidelines that an application should follow before it responds to AutoDL are given below:

1 An application should check if it is okay for AutoDL to download an application update if one is available for the terminal from VeriCentre before it sends a "`GO`" response to AutoDL.

2 If this application has any pending transactions in its batch, or if it is in the middle of another processing task, it should first complete these tasks before responding with a "`GO`" response to AutoDL.

3 There are instances when an application is waiting for an event to happen within a short amount of time and AutoDL may cause it to miss the event. In such cases, an application can send a "`NO`" response to AutoDL in the `ADL_RESPONSE_DOWNLOAD` event to prevent the download.

4 An application should respond back to AutoDL with the `ADL_RESPONSE_DOWNLOAD` event with a "`GO`" or "`NO`" response within the time interval specified by the `#ADL_EVT_RESP_TIMEOUT` parameter, and this parameter has a default value of 5 seconds. If this application does not respond to AutoDL within this timeout interval, then AutoDL will check for the `#ADL_DL_ON_TIMEOUT` parameter on the GID where this application resides. If it is not found on this GID, then AutoDL will check for the `#ADL_DL_ON_TIMEOUT` parameter on the GID where the current VC profile resides.

The `#ADL_DL_ON_TIMEOUT` parameter that is found on an application's own GID will take precedence over the `#ADL_DL_ON_TIMEOUT` parameter that is found in the GID where the current VC profile is present. If the `#ADL_DL_ON_TIMEOUT` parameter is not found in either of these two locations, then AutoDL will assume a default value of "`NO`" for this parameter. If the `#ADL_DL_ON_TIMEOUT` parameter has a value of "`GO`," then AutoDL will assume that this application is okay with going ahead with this download and if it has a value of "`NO`" or any other value, then AutoDL will consider it as a "`NO`" response and it will NOT proceed with the download at this time.

5 AutoDL will proceed with the download only if all the applications that are managed by the current VC profile (as defined by the `#ADL_GIDS_TO_CHECK` parameter in the current VC profile) are ready for the download.

AutoDL will detect that an application is ready for download if one of the conditions given below is satisfied:

- An application responds to AutoDL with a "GO" response in the ADL_RESPONSE_DOWNLOAD event in response to the ADL_STARTING_DOWNLOAD event from AutoDL. AutoDL must receive an application's "GO" response within #ADL_EVT_RESP_TIMEOUT seconds after it sent the ADL_STARTING_DOWNLOAD event to this application. The default value of the #ADL_EVT_RESP_TIMEOUT parameter is 5 seconds.

- An application is unable to respond to the ADL_STARTING_DOWNLOAD event from AutoDL within the timeout duration of #ADL_EVT_RESP_TIMEOUT seconds. However, the #ADL_DL_ON_TIMEOUT parameter is present on this application's own GID and it has a value of "GO", indicating that it is ready for a download.

- An application is unable to respond to the ADL_STARTING_DOWNLOAD event from AutoDL within the timeout duration of #ADL_EVT_RESP_TIMEOUT seconds and the #ADL_DL_ON_TIMEOUT parameter is not present on this application's own GID. However, the #ADL_DL_ON_TIMEOUT parameter is present on the GID where the current VC profile is stored and it has a value of "GO". This indicates that this application is ready for a download.

Based on the description given above, if at least one of the relevant applications on the terminal is not ready for a download, then AutoDL will NOT proceed with the download. The #ADL_DL_RETRY_LIMIT parameter, which has a default of 3 retries, specifies the number of times that AutoDL will attempt to retry a scheduled download that did not complete successfully. The time interval in minutes between any two download retry attempts is defined by the #ADL_DL_RETRY parameter and it has a default value of 2 minutes.

6 When AutoDL is ready to download any application updates from VeriCentre, it does not know before hand which applications will be downloaded from VeriCentre. VeriCentre will download all applicable applications to the updated terminal since the last download was perfromed. Therefore, when AutoDL sends the ADL_STARTING_DOWNLOAD event to all the applications in a terminal, it is not able to provide a list of the names of the applications to be downloaded as part of the ADL_STARTING_DOWNLOAD event.

NOTE In the case of VTMA performing a download, when an application gets a TM_STARTING_VID request for a VeriCentre Initiated Download (VID), the flexi field VID_APPNAME in this event contains the logical name of the application for which the download is targeted. Therefore, this application knows which application is going to be downloaded by VeriCentre and it can accordingly respond back to VTMA.

7   In most cases, an application which is already VTMA-compliant may have to be modified to make it AutoDL-compliant. This is because the criteria that an application uses to respond to VTMA with a "`GO`" response may not always be applicable for AutoDL, since a download done through VTMA is for downloading only one known application whereas a download done through AutoDL is for downloading one or more applications which are not known before the start of the download. Also, when an application responds to VTMA it can send a "`GO`," "`NO`," or "`CB`" (Callback) response to the response event, whereas AutoDL only supports "`GO`" and "`NO`" to the response event. Note that the "`CB`" response is treated by AutoDL as "`NO`".

8   The `TM_STARTING_VID` event of VTMA and the `ADL_STARTING_DOWNLOAD` event of AutoDL have the same "`#define value`" in the application code. Therefore, when an application gets the `TM_STARTING_VID` event or the `ADL_STARTING_DOWNLOAD` event, it should first check the name of the application that sent this event, then send the response event back to the same application and not assume that this event came from TMA or AutoDL. As a general rule, it is a good idea to respond back to the calling application and not hard code the name of the application to respond to.

9   During download in IP, GSM with PPP and Dial with PPP mode, VCS will not be able to entertain any transactions from client applications. As a result of this, calls to `EESL_send_event` directed to VCS will fail until the download is finished.

10 In DIALNOPPP mode, when the application receives the `COMM_3_REQUEST_EVENT` and COM3 is not in use, close the device and send `COMM_3_RELEASED_EVENT`. This will enable AutoDL to acquire the device and proceed with the download. If COM3 is not released, AutoDL will not proceed with the download.

11 Any one of the following methods can be used to make an application AutoDL-compliant:

- Modify the application code to support the `ADL_STARTING_DOWNLOAD` event from AutoDL and to respond back to AutoDL with the `ADL_RESPONSE_DOWNLOAD` event using the guidelines given in this document.

- Modify the application code to set the `#ADL_DL_ON_TIMEOUT` Config.sys parameter in the application's own GID to a value of "`GO`" or "`NO`" based on whether an application is ready or not for a download. One possible approach is to initialize the `#ADL_DL_ON_TIMEOUT` Config.sys parameter in its own GID to a value of "`NO`" and to set it to "`GO`" whenever all financial transactions in the terminal are settled or closed. If an application is set to close its batch of transactions automatically each day at 11.30 P.M. and if AutoDL is setup to perform automated downloads, say between 12.30 A.M. and 5.30 A.M., then when AutoDL checks the `#ADL_DL_ON_TIMEOUT` Config.sys parameter in the applications own GID between 12.30 A.M. and 5.30 A.M., it will find this parameter set to "`GO`" and it can proceed with its download.

- If an application does not store any financial transactions while always being ready to allow AutoDL to perform downloads, and if it allows AutoDL to clear its GID and download a new application, then no code changes are needed in the application and the application developer only needs to add the `#ADL_DL_ON_TIMEOUT` Config.sys parameter to the application's existing list of parameters and set its value to "`GO`".

- It is also possible to prevent AutoDL from checking with applications that reside in certain GIDs, by excluding these GIDs in the value of the parameter `#ADL_GIDS_TO_CHECK`. For example, if `#ADL_GIDS_TO_CHECK` is set to "`1,2,3`", then AutoDL will only check with applications that reside in GIDs 1, 2 and 3 and it will ignore the applications that reside in the other GIDs. However, before specifying the value of this parameter, the user is advised to be guided by the information provided in this document and must be fully aware of the implications of preventing AutoDL from checking these applications.

12 If AutoDL is supported on a terminal, then all applications in the terminal should return to the VMAC menu after a few seconds of inactivity (preferably a configurable timeout). This will allow AutoDL to:

- Access all the devices that it needs to perform an update check or download

- Display the status on the console

- Print out a summary report

Error Messages

This appendix describes the error messages associated with the AutoDL application.

Errors Received from VeriCentre

For the errors received from VeriCentre in response to an update check request and their resolutions, refer to the Error/Information Messages section, under the Troubleshooting chapter of the VeriCentre Download Automation Reference Manual (VPN 24698).

Refer to Table 3 for a general list of VeriCentre errors.

Table 3　　　VeriCentre Errors

Error ID	Description
506-DA NOT ENABLED	Download Automation is not enabled in VeriCentre. AutoDL sets #ADL_DLD_ENABLE to 0 on receiving this message.
516-CALLBACK AFTER <XXXX>	VeriCentre is requesting for another update check after <XXXX> seconds to get a response. AutoDL performs another update check after <XXXX> seconds.
5<NN>-<Error Description>	Other error message from VeriCentre. AutoDL will not perform update check retries on receiving this message.

Update Request Errors

Please refer to Table 4 for the list of update request errors:

Table 4　　　Update Request Errors

Error ID	Description
COM UNAVAILABLE	Failed in acquiring the requested device.
CONNECTION FAILED	Connection with the host failed.
NO MEMORY	No memory.
CE REG AGAIN FAILED	Application is attempting to register again after a successful registration. If necessary unregister by calling ceAPI ceUnregister() and register again using API ceRegister().
CE REG FAILED	Registration failed as CommEngine is not running.
NO RESP RECEIVED	Application failed to receive a response.
NO RESP TIMEOUT ERR	No response, timeout error.

Table 4 **Update Request Errors**

Error ID	Description
APP NOT REGISTERED	Application has not successfully registered with CommEngine. This error returned if an application is attempting a ceAPI prior to successful registration.
PARAM IS NULL	Parameter is null when one is not expected.
INVALID PARAM	Parameter is invalid or out of range.
CE NOT DEV OWNER	CommEngine is not the owner of the device. This is a communication device that CommEngine is aware of but currently not in its possession.
DEV BUSY	CommEngine is currently the owner of this device. CommEngine is unable to release this device as it is busy. This error is returned if there are open sockets.
CANNOT UNREG	Application cannot unregister for one of the following reasons: • Application has registered itself as CommEngine's device management application • This application has devices checked out or has pending requests for devices. Check in all devices or cancel all requests before attempting to unregister again.
NWIF BUSY	The configuration cannot be changed as the network interface is in a run state. To change configuration -- stop, change configuration and restart.
DD NOT READY	The Device Driver is not in a state to provide response to parameter requests. In the case of an ioctl() command, CommEngine is expecting the nwif's state to at least be in OPEN before it proceeds.
NO CE EVENT	No CommEngine Notification Event in queue or Event Notification was not enabled.
EX CMD FAILED	Execute Command Failed.
NOT DEV OWNER	Application did not check out this device or application is attempting to check in a device that it did not check out apriori.
STATE ERROR	ceStart/StopNWIF() state error. Target mode passed might be less than CommEngine's current state.
CE START DIAL FAILED	ceStartDialIF() failed.
START STOP BUSY	A previous call to ceStartNWIF() or ceStopNWIF() is still being processed.
DDI INIT FAILURE	This is returned when ddi driver can not be initialized.

Table 4   Update Request Errors

Error ID	Description
INVALID RESPONSE	An XML response with invalid elements was received.
MEDIA NOT SUPPORTED	The media in ADL Mode is not supported in the terminal.
NO RESPONSE	Failed in receiving update check response.
UPDCHK RESP RECEPTION ERROR	Error in reception of Update Check response packet.
VCS BUSY	Failed in sending an event to VCS.
VCS NOT FOUND	No VCS is running in the terminal.
VCS-SSL NOT SUPPORTED	The VCS running in the terminal does not support SSL.
VCS SWITCH DENIED	Switching is not allowed and application should try after some time. (For terminals using EMEA-VCS, this specifies that switching is not allowed because the startup media is not the same as the requested media.)
VCS SWITCH SETCOMBO FAIL	IO module is faulty.
VCS SWITCH CONN FAILED	Netconnect has failed while switching to the requested media.
VCS SWITCH DEV NOTAVAIL	The requested device is not available.
XML PARSING FAILED	Failed in parsing the elements of the XML response.

Download Request Errors

Please refer to the following table for the list of download request errors:

Table 5   Download Request Errors

Error ID	Description
CANNOT OPEN PORT	Cannot open modem serial port
COM WRITE FAILED	write() to COMx failed
DL DENIED BY <app name>	Application responded with NO to ADL_STARTING_DOWNLOAD event.
DL REQ FAILED <Session>:<Native>	Download via VCS failed. <Session> and <Native> pertains to the session and native errors from the VCS_EVT_DL_RESP event. This error only occurs with Corporate VCS.
DLD HOST ABORT / HOST SENT U PACKET	Download aborted by host, or remote host sent "U" packet
DOWNLOAD CANCELLED	NO was selected during the download prompt during business hours.
ENQ TIMEDOUT	Timed out waiting for ENQ
ERROR WRITING	Error writing file (possibly out of space)
GROUP ACCESS VIOLATION	Group access violation
HOST TIMED OUT / NOT SUPPORTED / BAD DLD PACKET	Timed out waiting for host, or bad download data packet (host error)
INVALID CONFIG / USER PRESSED CANCEL	Invalid configuration, or the user pressed the CANCEL key
LINE BUSY	Modem reported line busy
LOST CARRIER	Lost carrier
NO ANSWER	Modem reported no answer
NO CARRIER	Modem reported no carrier
NO DIAL TONE	Modem reported no dial tone
NO LINE	Modem reported no line
NO RESP FROM <app name>	Application did not respond to ADL_STARTING_DOWNLOAD event.
R/W PORT ERROR / RECVD TOO MANY NAKS	I/O error reading or writing to modem port, or received too many NAKs
SENT TOO MANY NAKS	Sent too many NAKs
SET TIMER FAILED	set_timer() failed

Downloading AutoDL

This chapter provides information on downloading AutoDL. It provides the AutoDL directory structure and the contents of each directory. On successful download of AutoDL, the AutoDL directory should have the structure and contents as shown in the subsequent section.

AutoDL can be downloaded either from VeriCentre or using the DDL download tool from a PC.

Refer to the `Verix_eVo_Readme.rtf` for software requirements and system specification.

Downloading AutoDL from VeriCentre

AutoDL is dowloaded to the terminal whenever there is an updated version available on VeriCentre. For details on configuring AutoDL on VeriCentre for download to a terminal, refer to AutoDL Parameters.

Downloading AutoDL from PC

The AutoDL application can be downloaded to a terminal from a PC by going to the directory to Output\Download then running AutoDL.bat.

Directory Structure

When you run setup.exe, the following directory structure is created:

```
├── Verix_eVo_Readme.rtf
├── 📁 Docs
│   └── DOC00311_Verix_eVo_AutoDL_
│       Reference_Guide.pdf
├── 📁 Include
│   ├── AdlAppInterface.h
│   ├── AdlInterface.h
│   └── AutoDL.h
├── 📁 Output
│   ├── 📁 Download
│   │   ├── AutoDL.bat
│   │   ├── AutoDLDbgF.dld
│   │   └── AutoDLRelF.dld
│   └── 📁 Files
│       ├── ADLCFG.ini
│       ├── AutoDL.ins
│       ├── IMMAutoDL.ini
│       ├── 📁 Data
│       │   ├── EnglAdl.DAT
│       │   └── MenuAdl.dat
│       ├── 📁 Debug
│       │   ├── AutoDL.out
│       │   └── 📁 Signfile
│       │       └── 📁 Ram
│       │           └── AutoDL.p7s
│       └── 📁 Fonts
│           ├── asc4x16.vft
│           ├── asc4x16I.vft
│           ├── asc6x16.vft
│           ├── asc8x21.vft
│           ├── asc8x21I.vft
│           └── sputil.vft
```

```
├── 📁 Output
│   └── 📁 Files
│           ├── 📁 Images
│           │   ├── adlabt.vmp
│           │   ├── adlchgpw.vmp
│           │   ├── adlchkup.vmp
│           │   ├── adldetrep.vmp
│           │   ├── adlgetup.vmp
│           │   ├── adlico.vmp
│           │   ├── adlrep.vmp
│           │   └── adlset.vmp
│           ├── 📁 Release
│           │   ├── AutoDL.out
│           │   └── 📁 Signfile
│           │       └── 📁 Ram
│           │           └── AutoDL.p7s
│           └── 📁 Resource
│               ├── AutoDL.dat
│               └── AutoDL.RES
└── 📁 VCExport
    ├── AutoDL.dld
    ├── AutoDL.tdf
    ├── AutoDL.xml
    ├── AutoDL.zip
    ├── AutoDL-VX520.exp
    ├── AutoDL-VX520.tdd
    ├── AutoDL-VX680.exp
    ├── AutoDL-VX680.tdd
    ├── PreCompressed_AutoDL.dld
    ├── VcExport_Readme.txt
    └── 📁 1
        ├── AutoDL.p7s
        ├── AutoDL.res
        └── MenuAdl.dat
```

```
└── 📁 VCExport

        └── 📁 F1
                ├── adlabt.vmp
                ├── ADLCFG.ini
                ├── adlchgpw.vmp
                ├── adlchkup.vmp
                ├── adldetrep.vmp
                ├── adlgetup.vmp
                ├── adlico.vmp
                ├── adlrep.vmp
                ├── adlset.vmp
                ├── asc4x16.vft
                ├── asc4x16I.vft
                ├── asc6x16.vft
                ├── asc8x21.vft
                ├── asc8x21I.vft
                ├── AutoDL.dat
                ├── AutoDL.ins
                ├── AutoDL.out
                ├── EnglAdl.DAT
                ├── IMMAutoDL.ini
                └── sputil.vft
```
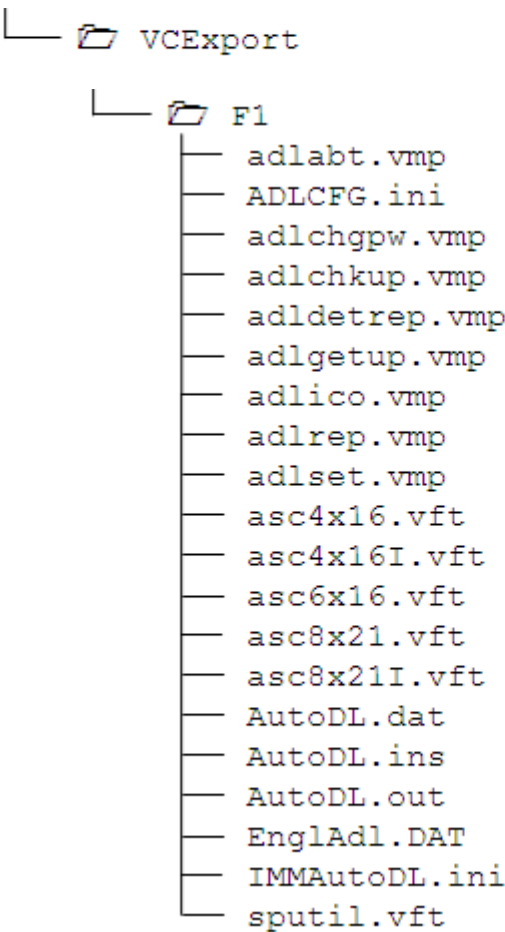
Figure 32   AutoDL Directory Structure for Verix eVo

Directory Contents

Table 6 lists the contents of the AutoDL directories.

Table 6   Contents of AutoDL directories

Directory	Contents
Docs	Contains the AutoDL Reference Guide. The file name of the document is `DOC00311_Verix_eVo_AutoDL_Reference_Guide.pdf`.
Include	Contains the include files that can be included to make the application AutoDL compliant.
Output	Contains uncompressed AutoDL files that are downloaded to the terminal.
VCExport	Contains compressed and uncompressed files of AutoDL to be configured on VeriCentre. For details, refer to `VCExport_Readme.txt`

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Verix eVo AutoDL

Reference Guide