
Installation and Operations Manual

WinSen Sentinel Interface Program

Sentinel Systems Corporation

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Introduction

What it Does

The WinSen Sentinel Interface program provides an interface between property management programs and the Sentinel Systems Corporation WinSen Sentinel Access Control/Alarm software. The program conforms to the **Universal Interface Specification**. Any property management software that conforms to the Universal Interface Specification can interface with WinSen Sentinel, provided that you have purchased that option from Sentinel Systems.

For the complete text of the Universal Interface specification, see “The Universal Interface Specification” on page 9.

System Requirements

The WinSen Sentinel Interface program runs under Windows 95, 98, or Windows NT. We recommend a Pentium processor with a minimum of 32 MB of RAM.

Overview of the Interface Procedure

To begin, the management software creates a text file (normally “c:\gate\update.txt”) containing the desired changes. The file must be formatted in accordance with the Universal Interface Specification. The management software then invokes “update.exe” (or “update.bat” if a DOS program) from the same directory where the update.txt file was created. The WinSen Sentinel Interface program then reads the text file, and transmits the changes to WinSen Sentinel. The result of each transmission is displayed on the screen, as well as logged to a text file named “result.txt” (this filename may vary for a multi-site facility). The text file log allows the management software to determine if the transmission was successful or not, and take action accordingly. If the transmission was not successful, error codes are provided both on the screen and in the result file. For a list of error codes, see “Result Values” on page 17.

The Interface program stays open after the transmission process is complete, allowing the operator to determine if there were any problems. If desired, the program can be minimized and will continue to operate in the background.

Normally, the Interface program expects the update.txt file to be located in the \gate directory on the hard drive from which it is run, in accordance with the Universal Interface specification. If for some reason another directory is used, this can be changed in the setups form under the Edit menu.

WinSen Sentinel supports **time zones** to designate the gate hours for your tenants, and **access levels** to designate which keypads your tenants are allowed to use. Since not all management software supports both options, the interface program allows you to designate default values for these two fields. When a movein is performed, and the management software does not supply values for one or both fields, the interface program will assign the default values. The default for both values is 0, but can be changed in the setups form under the Edit menu.

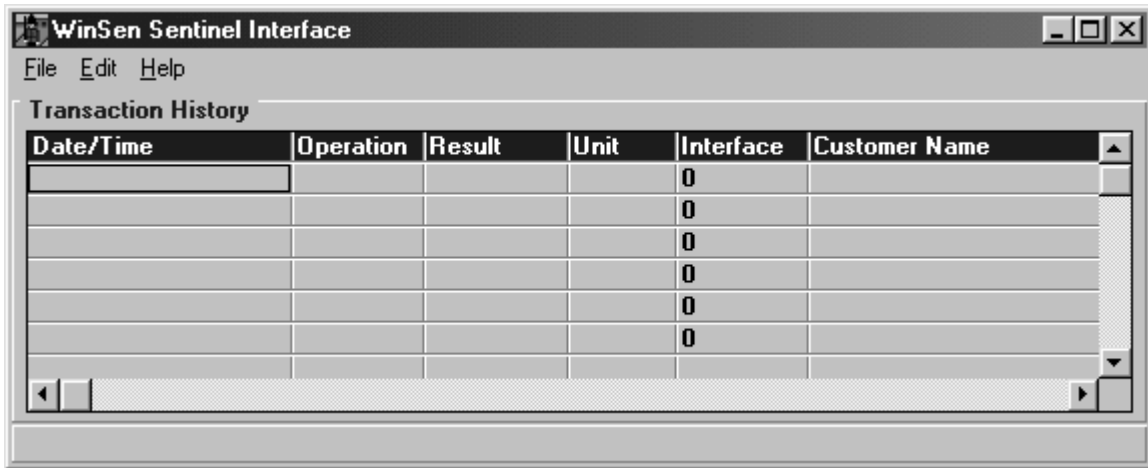
Getting Started

Installation

1. Before installing the Universal Interface program, we highly recommend that you close all open applications.
2. If you have not yet installed WinSen Sentinel, install it first. Installation instructions for WinSen Sentinel are found in the WinSen Sentinel Operations Manual.
3. Insert the #1 distribution disk into the source floppy drive (this will typically be your A: drive).
4. Point to the Start button to display the Start Menu. You can also bring up the Start Menu by pressing <Ctrl+Esc>. From the Start Menu, choose “Run”.
5. You will be presented with a dialog box asking for the “Command Line”. Type **A:SETUP** then press <Enter> or click on OK. Type **B:SETUP** instead if you are installing from your B: drive.
6. The installation program display an introductory message. When you are ready, choose Next.
7. The setup program will display a dialog box asking for the installation directory. By default, this will be C:\WinSen. If you need to change this, you can do so by clicking the Browse button. Then click Next.
8. The setup program will now ask for the name of the Start Menu folder to add the Universal Interface program icon to. The default choice is WinSen; you can change it if necessary by clicking the desired folder in the list. Then click Next.
9. Click Next again.
10. The program files will be copied to your hard disk. A final dialog will be displayed, indicating the successful installation. Click OK.
11. This completes the installation.

Running the Program

To start the program, point to the Start button, then WinSen, then the “WinSen Universal Interface” icon. The main program window will be displayed:



The main window of the interface program contains File, Edit, and Help menus, and a grid which will display the results of each transaction as it occurs.

Organization of the Menus

Following is the organization of the menus and a brief explanation of each menu selection. The various options will be explained in detail later on in this manual.

File

The file menu contains two choices:

Interface Now: causes the program to perform the interface to WinSen Sentinel. Normally it is unnecessary to use this option, because the program does the interface automatically when invoked by the management software.

Exit: closes the interface program.

Edit

The edit menu contains one choice: **Setups**. This option allows you to define defaults for the interface program. You setup the default interface directory, time zone, and access level in this option. The default time zone and access level information is used if the management software does not support these fields.

Help

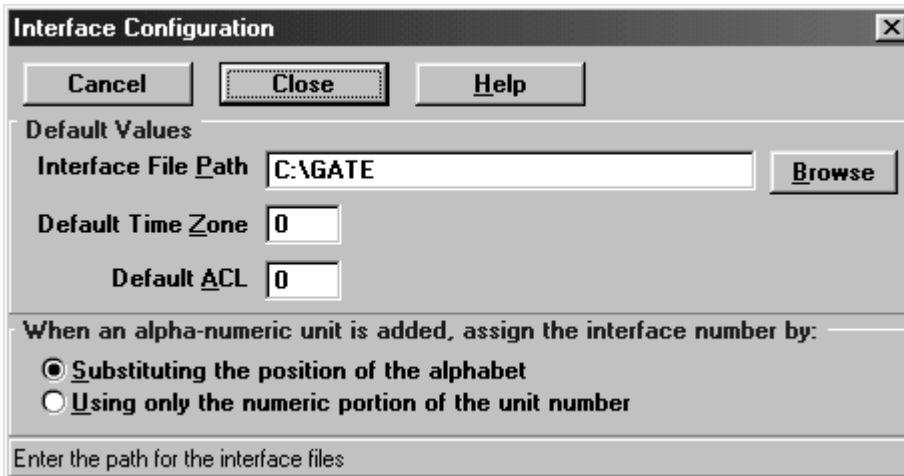
This menu allows you to obtain “on-line” help. You can also press “F1” at any time for context-sensitive help.

Configuration

There is a minimal level of configuration required for the interface program. In most cases, no configuration at all is required, and the program will use default values. You can configure the interface directory, the default time zone, and the default access level. The interface number option is also configurable as explained below.

Setups

Select “Setups” from the Edit menu to display the following form:



Interface File Path: enter the path where the interface files are located. In accordance with the universal interface specification, the default path is C:\GATE. You can click the browse button to select the directory, or you can type it in directly.

Default Time Zone: enter the time zone to use when a movein is done via the interface and no time zone information is supplied by the management software. The default choice is 0.

Default Access Level: enter the access level to use when a movein is done via the interface and no access level information is supplied by the management software. The default choice is 0.

Interface number: the interface number, also called the A.I. (access interface) number, is the unit number used by WinSen Sentinel for keypad entry and for alarm system purposes. WinSen Sentinel supports alpha-numeric unit numbers, for example “A01”, but since the tenant normally keys in their unit number and passcode at the keypad, only a numeric unit number can be used for that purpose. Also, only numeric numbers are supported for alarm system purposes. Thus, WinSen Sentinel maintains a unit number and an interface number for each unit.

This option tells the interface program how to assign the interface number to a unit when it is added via the interface. If the unit number does not contain alpha-numerics, the interface number will be exactly the same as the unit number. If the unit number does contain alpha-numerics, there are two options for assigning the interface number:

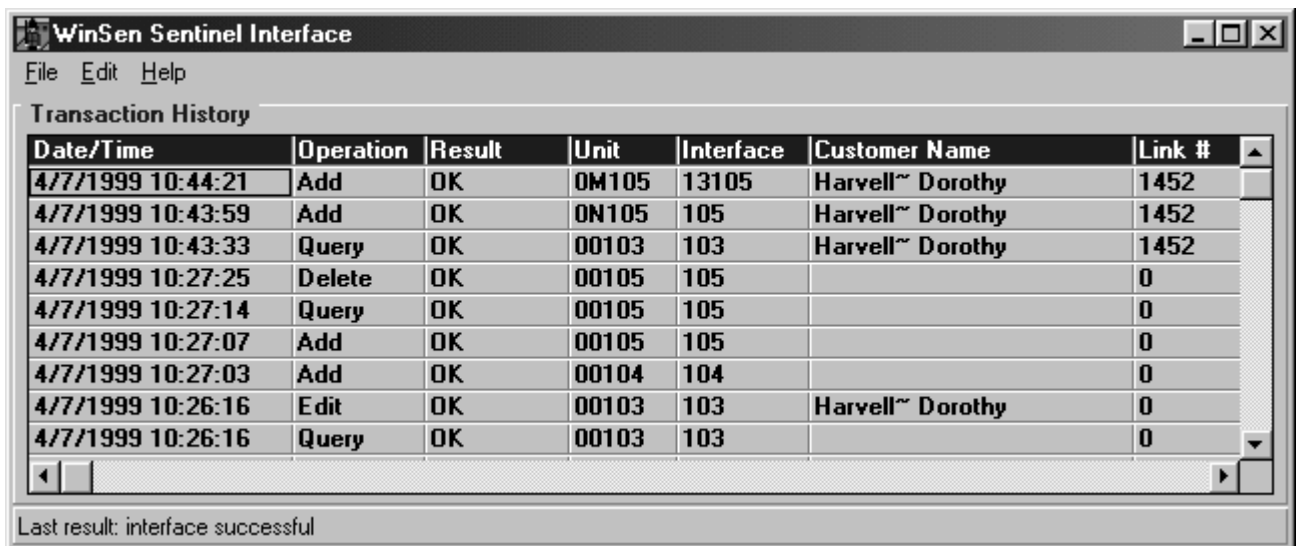
1. The alpha character can be substituted with its numeric position in the alphabet. Thus, unit A01 would have an interface number of 101, B01 would be 201, D99 would be 499, and so on. This is the default selection.
2. It can be only the numeric portion of the unit number. For example, unit A01 has an interface number of 1. However if you also have a unit B01 this scheme will not work, because the interface number for that unit would also be 1, and the interface numbers must be unique.

After you have made your choices, click **Close** to save your changes. The changes will be effective with the next transaction. You can also click **Cancel** if you decide not to save your changes, or **Help** to access the on-line help file.

Operations

Interfacing With WinSen Sentinel

No user intervention is required to interface with WinSen Sentinel. The interface program is called by the management software each time an interface is desired. Then the interface program reads the update.txt file in the designated directory and transmits the desired changes to WinSen Sentinel. After each transmission, the interface program will display the date & time of the transaction, the requested operation, the result, and the data read from the update.txt file:



The screenshot shows a window titled "WinSen Sentinel Interface" with a menu bar (File, Edit, Help) and a "Transaction History" table. The table has columns for Date/Time, Operation, Result, Unit, Interface, Customer Name, and Link #. Below the table is a status line that reads "Last result: interface successful".

Date/Time	Operation	Result	Unit	Interface	Customer Name	Link #
4/7/1999 10:44:21	Add	OK	0M105	13105	Harvell~ Dorothy	1452
4/7/1999 10:43:59	Add	OK	0N105	105	Harvell~ Dorothy	1452
4/7/1999 10:43:33	Query	OK	00103	103	Harvell~ Dorothy	1452
4/7/1999 10:27:25	Delete	OK	00105	105		0
4/7/1999 10:27:14	Query	OK	00105	105		0
4/7/1999 10:27:07	Add	OK	00105	105		0
4/7/1999 10:27:03	Add	OK	00104	104		0
4/7/1999 10:26:16	Edit	OK	00103	103	Harvell~ Dorothy	0
4/7/1999 10:26:16	Query	OK	00103	103		0

Last result: interface successful

Not all data is displayed at once. You can use the horizontal scroll bar at the bottom of the data grid to scroll the rest of the columns into view. If any field is blank, it indicates that no data was supplied by the management software. The data displayed is:

The **status line** at the bottom of the form will show the result of the last transmission, if any.

Date/Time: the date and time of the interface transaction.

Operation: the operation that was requested. This will normally be either **add**, **edit**, **query**, or **delete**.

Result: shows the result of the transmission. If the transmission was good, OK will be shown, otherwise an error # will be given. For a list of error codes, see "Result Values" on page 17. A description of the error will also be shown on the status line at the bottom of the window.

Unit: the unit number.

Interface: the interface number that was assigned by the interface program, based on the interface number option in Edit|Setups.

Customer Name: the customer name.

Link #: the linking number supplied via the interface. This corresponds to the Customer ID number in WinSen Sentinel, and can be used to link two or more units together via the interface by the management software. See “Update.txt” on page 13 for more information.

Status: the status of the unit. This will normally be **rented**, **delinquent**, or **vacant**.

Passcode: the passcode.

Card #: the card number. This would be used if you have a cardreader system.

TZ and ACL: the time zone and access level.

On-Site: the on-site status for the unit. This can be set via the interface if the management software supports it.

ALM Stat: this field only applies if you have an alarm system. The alarm on the unit can be enabled or disabled via the interface if the management software supports it. **E** means enabled, **T** means a “time disabled” alarm, **P** means a permanently disabled alarm, and **B** means both time and permanently disabled alarms. See the WinSen Sentinel manual for more information.

The Universal Interface Specification

Introduction

Since the 1980's various property management packages and security packages for the self-storage industry have offered the ability to interface with one another. With more vendors in the marketplace, the number of interface protocols is growing rapidly and generating problems for the end user. Sentinel Systems has much experience with interface protocols on both the property management side and on the security side. We applaud the efforts of others to develop a universal interface but believe that there are a number of issues that have not been resolved. We have applied our knowledge of current interface protocols and written this document to address those issues.

The intent of the Universal Interface is to allow both DOS and Windows based property management and access/alarm software packages to communicate with each other in a platform-independent way.

We will use the following terminology in our discussion:

- **Management software** - This is the property management software that maintains information about tenants including tenant name & address, balance due, etc.
- **Access control/alarm software** - this is the software and/or hardware that controls access to the facility and may also monitor individual door alarms.

If enough vendors agree to implement a universal interface specification, then a certification process would be put in place so that the end user can be assured that the products will work together.

Please review the general procedure and requirements that follow.

General Procedure

1. **Create a text file:**

The management software will create an update text file (update.txt) containing one line for each change that should be made by the access control/alarm software. The text file may contain one line (e.g. a move-in change) or it may contain multiple lines (e.g. a dump of all units). The management software should have the ability to send all information in its database in order to initialize a new or replaced gate system.

2. **Invoke an update program:**
The management software will execute an update program (update.bat or update.exe) supplied with the access control/alarm system. To allow Windows-based management software to communicate with Windows-based access control/alarm software without reverting to DOS batch files, the management software may execute update.exe instead of update.bat.
3. **Process the text file:**
The update program will process each line of the update text file (update.txt) and update its internal database and/or send these updates to the hardware controller. During the update process, the program will generate a result text file (result.txt) that reports the status of each change that was requested. If any warnings/errors are encountered, the program will generate an error text file (errors.txt) which provides a summary of the messages. The program may also generate an error log file (errors.log) which contains more details about the errors that were encountered.
4. **Report results:**
The management software will provide a means of reporting any errors that were encountered by the update program so that the end user can correct any discrepancies.

The file names selected above are meant to be informative as well as adhere to the common extensions that are used by DOS and Windows based programs.

Management Software Requirements

This document divides the items for the management software into two areas: requirements and options. It is recognized that not all packages have the same capabilities but a minimum standard must be met by all packages for the end-user to gain a benefit from this specification.

Standard configuration

The standard configuration is the minimum level for management software. It includes the following requirements:

1. Create a text file (update.txt) which will contain the information needed to update the access control/alarm software. Please see "Update.txt" on page 13 for more information on the format of this file.
2. Read the update.siz file to determine the amount of memory needed by the program. Provide an error message if that amount of memory is not available. Delete the error file (errors.txt) so that the existence of this file may be used as an indicator that the update program executed. Invoke the update program via the update.bat batch file or update.exe.
3. After the update program is executed, read the error file (errors.txt) and determine the status of the update requests. If errors occurred, then process the results file (result.txt) and display a summary of the errors.
4. Provide a means for calling the main access control/alarm program via the gate.bat batch file. Read the gate.siz file to determine the amount of memory needed by the program. Provide an error message if that amount of memory is not available.
5. Provide a mechanism for transferring the entire management software database to the access control/alarm software.

6. Provide documentation that shows which fields are written to in the update.txt file and any other requirements for running the management software in different environments (DOS, Windows 3.x, Windows 95, etc.). This documentation should be available to other vendors.

Note: the files referred to above should be placed in the \Gate folder. Normally, this folder will be located on drive C:. However, if the management software were installed on a different drive, then the \Gate folder would be located on that drive. To prevent file name conflicts, vendors are encouraged not to put any other files in the \Gate folder. Only seven required files (update.txt, result.txt, errors.txt, update.bat, update.siz, gate.bat, and gate.siz) and two optional files (errors.log and update.exe) should be placed in the \Gate folder.

Management Software Options

There are two optional components on the management side: network configurations and multiple site configurations. The operating procedure will change slightly if the management software package supports either of these options. Normally, the management software will only be able to correctly transfer information to access/control alarm software that also supports the corresponding option although some degraded mode of operation may be possible if this is not the case.

Network configuration

The network configuration includes the following requirements:

1. Meet all of the requirements of the standard configuration.
2. Be able to handle update requests from multiple workstations. It is certainly possible for two move-ins to be processed at the same time in a network configuration. The management software should be able to transfer information to the access control/alarm software in this scenario. Normally, the management software would write information to the \Gate folder on the same drive where the management software is installed. But if the two workstations were writing to this folder at the same time, some information might be lost. The management software may need a configurable destination folder on a workstation-by-workstation basis.

Multiple site configuration

The multiple site configuration includes the following requirements:

1. Meet all of the requirements of the standard configuration with some file name changes. All of the file names would have a site suffix appended to them. For example, the management software would invoke update1.bat for site #1 and update2.bat for site #2. In the same manner, the other file names would also change: update.txt ⇒ update1.txt, result.txt ⇒ result1.txt, error.txt ⇒ error1.txt, error.log ⇒ error1.log, update.siz ⇒ update1.siz, gate.bat ⇒ gate1.bat and gate.siz ⇒ gate1.siz.

It is fairly natural for the network configuration to be combined with the multiple site configuration. In this case, all of the requirements would need to be met.

Access Control/Alarm Software Requirements

This specification divides the items for the access control/alarm software into two areas: requirements and options. It is recognized that not all packages have the same capabilities but a minimum standard must be met by all packages for the end-user to gain a benefit from this specification.

Standard configuration

The standard configuration is the minimum level for access control/alarm software. It includes the following requirements:

1. Provide an update.bat batch file that will be used to invoke the update program. A Windows-based update.exe program may also be provided.
2. Create or provide an update.siz file that contains information about how much memory is required by the update program.
3. Provide an update program to process the update text file according to the rules in the File Contents section on page 13. During the processing, the update program will create a results.txt file and an errors.txt file. The program may also create an errors.log file. The update program should always return control to the calling program even if an error is encountered. This allows the calling program to continue when processing in a batch mode. The update program does not need to save or restore any text or graphics screen used by the management software. The access control/alarm software should be able to handle any number of records in the update.txt file. It is recommended that the program read one line at a time rather than read the whole file at once. This lowers the memory requirements. For troubleshooting purposes, it is recommended that update.txt be renamed update.old after the update process is finished.
4. Provide a gate.bat batch file that will be used to invoke the main access control/alarm program.
5. Create or provide a gate.siz file that contains information about how much memory is required by the main program.
6. Provide some way to configure the defaults that are used by the update program when no information is passed in a particular field. For example, if the management software does not have access levels, the update program would need to assign a default access level at the time of move-in. The user should have some control over the defaults that are used.
7. Provide documentation that shows which fields are processed in the update.txt file and any other requirements for running the access control/alarm software in different environments (DOS, Windows 3.x, Windows 95, etc.). This documentation should be available to other vendors.

Note: the files referred to above should be placed in the \Gate folder. Normally, this folder will be located on drive C:. However, the update program should also function if the folder is located on some other drive. Because the access control/alarm software may not be located on the same drive, the update program may need a command line parameter for the location of the update.txt file. To prevent file name conflicts, vendors are encouraged not to put any other files in the \Gate folder. Only seven required files (update.txt, result.txt, errors.txt, update.bat, update.siz, gate.bat, and gate.siz) and two optional files (errors.log and update.exe) should be placed in the \Gate folder.

Access Control/Alarm Software Options

There are two optional components on the access control/alarm side: network configurations and multiple site configurations. Many management software packages have a network option that allows multiple users to process transactions at larger facilities. In fact, with the advent of Windows, peer-to-peer networks are quite common in larger facilities. In addition, some management software packages have the ability to track multiple facilities (either multiple physical facilities or different

phases of one physical facility) and some vendors have remote versions of their access control/alarm software. A protocol for these enhanced packages is necessary to support seamless integration.

Network configuration

The network configuration includes the following requirements:

1. Meet all of the requirements of the standard configuration.
2. Provide an update program that can communicate status changes to the main access control/alarm software, which may reside on another computer. This communication can take any form. For example, a network database could be updated or the program could use NETBIOS to communicate directly with the main program running on another computer. Additional result values are defined for the network configuration.
3. Be able to handle update requests from multiple workstations. It is certainly possible for two move-ins to be processed at the same time in a network configuration. The access control/alarm software should have a way to handle this scenario.

Multiple site configuration

The multiple site configuration includes the following requirements:

1. Meet all of the requirements of the standard configuration with some file name changes. All of the file names would have a site suffix appended to them. For example, the management software would invoke update1.bat for site #1 and update2.bat for site #2. In the same manner, the other file names would also change: update.txt ⇒ update1.txt, result.txt ⇒ result1.txt, error.txt ⇒ error1.txt, error.log ⇒ error1.log, update.siz ⇒ update1.siz, gate.bat ⇒ gate1.bat and gate.siz ⇒ gate1.siz.
2. Provide a mechanism for processing updates from multiple facilities on the same computer. For example, there may need to be a configuration option in the access control/alarm software to distinguish between updates at the local facility and updates at the remote facility. The update program would also have to write information to the correct file names as listed above.

It is fairly natural for the network configuration to be combined with the multiple site configuration. In that case, all of the requirements would need to be met.

File Contents

Update.txt

This file contains the update records and is located in the \Gate folder. The file has a number of required fields and a number of optional fields. Provisions should be included in the update program to use defaults for certain items if those items are not specified. For example, some access control/alarm systems can limit tenants to particular keypads. However, management software programs may not have a field where the access limit can be set and would leave the field blank in update.txt. Therefore, the update program should recognize that no information is being provided and set the default when a move-in is processed. The table below provides a field name, a field type and a brief description for the field. More details for each field are provided below.

Table 1 – Update.txt File Format (* = Required Field)

Field Name	Field Type	Field Size	Description
Version*	Numeric	4	Version of the Interface (e.g. 1.00)
Operation Code*	String	1 byte	<u>A</u> dd, <u>E</u> dit, <u>D</u> elete, or <u>Q</u> uery
Unit Number*	String	10 bytes	Right Justified
Unit Status	String	1 byte	<u>R</u> ented, <u>D</u> elinquent, <u>V</u> acant, or blank
Password	Numeric	10 bytes	Right Justified or blank
Card Number	Numeric	10 bytes	Right Justified or blank
Time Zone/Period Code	Numeric	2 bytes	Right Justified or blank
Keypad/Access Level	Numeric	2 bytes	Right Justified or blank
Start Time	Numeric	4 bytes	24 hour format or blank
End Time	Numeric	4 bytes	24 hour format or blank
Alert Code	String	1 byte	<u>A</u> lert, <u>N</u> ot on Alert, or blank
On-site Status	String	1 byte	<u>O</u> n-site, <u>N</u> ot on-site, or blank
Alarm Status	String	1 byte	<u>P</u> ermanently disabled, <u>T</u> ime disabled, <u>B</u> oth disabled, <u>E</u> nabled, or blank
Link Number	Numeric	10 bytes	Right Justified, or blank
Tenant Name	String	30 bytes	Left Justified or blank
Result Value	Numeric	2 bytes	From 0-99, see Result Values
Reserved	String		Reserved for later enhancements
CR/LF	String	2 bytes	Carriage return/linefeed

Fields left blank indicate that either no change is desired or the field is not supported. The update program will need to determine whether to set default values for blank fields. Normally, this would only be necessary when the status of a unit changes from vacant to rented.

Version: This field contains the version number of the interface that is supported by the management software. Inclusion of this field allows the interface protocol to be updated while maintaining backward compatibility. The initial version is 1.00.

Operation Code: There are four options for this field. **A** (Add a unit), **E** (Edit a unit's information), **D** (Delete a unit), and **Q** (Query a unit). This field is required. An error message should be generated if an add request is received for a unit that already exists or if a delete request is received for a unit that does not exist. A unit to be added may be rented, in which case all relevant information should be supplied, or it may be vacant, followed by an edit operation to rent the unit if necessary. In other words, an add operation can be combined with an edit operation by setting the **Unit Status** field to **R** as an alternative to doing the two separately.

Multiple changes may exist in one record when the Edit option is used. The update program should process all changes. The Query option allows the management software to query the status of a unit. All information about the unit would be returned in the result.txt file. Fields that are not supported by the access control/alarm software would be left blank.

Unit Number: This is a right justified alphanumeric field containing the unit designation. A unit number can not be changed using the Edit operation code. To change a unit number, use the Delete operation code to delete the old unit, then use the Add operation code to add the new unit. Leading zeros are not significant and should be removed from the unit number if they exist.

Unit status: There are four options for this field. Vacant will vacate the unit and set all of the fields to their default values. The rest of the fields may be left blank. If the unit status is changing from

Vacant to Rented, all fields in the line will be used. If a field is blank, the update program will set that field to the default value. Delinquent will lock out the customer and blank means that this field is not supported (no change would be made to the status in this case).

Password: This field should contain the unit's access code/password or will be blank. If the field is blank, then the management software does not support a password. Duplicate passwords may or may not be allowed depending on the access control/alarm software.

Card Number: This field should contain the unit's card number or will be blank. Some access systems have keypads and/or cardreaders; this field allows a separate card number to be entered. If the field is blank, then the management software does not support a card number and the access system may have to use the password field for the card number depending on the facility's configuration.

Note: Some systems allow a customer who rents more than one unit to use one access code to enter the facility and open any of their units. To link units in the gate system via the interface, the management software should use the **link number** as explained below.

Time zone/period code: This field will contain a two-digit number from 0 to 99 or will be blank. Many access control/alarm software packages allow the user to define specific time zones. These time zones are associated with a number. The management software may set either this field or the Start time field but not both. If this field is blank on a new move-in, then the update program should assign the default time zone if necessary.

Keypad/access level: This field will contain a two-digit number from 0 to 99 or will be blank. Again, many access control/alarm software packages allow the user to limit access to specific keypads. These time zones are associated with a number. If this field is blank on a new move-in, then the update program should assign the default access level if necessary.

Start time: This field will contain a 4-digit time or will be blank. Some systems require a unique time period to be associated with each access code. The management software may set either this field or the time zone field but not both. If this field is blank on a new move-in, then the update program should assign the default start time if necessary.

End time: This field will contain a 4-digit time or will be blank. Some systems require a unique time period to be associated with each access code. The management software may set either this field or the time zone field but not both. If this field is blank on a new move-in, then the update program should assign the default end time if necessary.

The time includes hours and minutes in a 24-hour format. For example, 7:00 AM would 0700 and 8:30 PM would be 2030.

Alert code: This field will contain either an A, N, or will be blank representing Alert, Not on Alert, and not supported.

Tenant name: This is a left-justified alphanumeric field containing the renter's name. This field must contain printable characters only.

On-site status: This field will contain either an O, N, or will be blank. Some access control/alarm packages track whether a tenant is currently on-site. This option allows the management software to change this indicator without forcing the user to start the access control/alarm software. If the field is blank, the on-site status should not be changed.

Alarm Status: This field will contain a P, T, B, E, or will be blank. Some access control/alarm packages track whether the alarm for a unit has been disabled because of problems or because no alarms should be registered during certain hours. This option allows the management software to

change this indicator without forcing the user to start the access control/alarm software. If the field is blank, the alarm status should not be changed.

Link Number: If there is a number in this field, the gate system will link this unit with all other units with the same link number. The link number used by the gate system does not necessarily have any correspondence to any similar number in the management software, nor does it need to. The recommended way to link two units via the interface is for the management software to perform a query operation of the unit to link with. This returns the gate system link number for that unit. The subsequent edit or add operation then uses that link number. To break a unit from a link, vacate the unit, then reassign it with the link number set to 0.

Result Value: This field is initially left blank. After the update program processes the record, an entry will be made in this field when it is written to the result.txt file. See “Result Values” on page 17 for more information.

Reserved: The rest of the line is reserved for future changes. The record length is not fixed; the end of the line will be marked by a carriage return/linefeed. The carriage return/linefeed may follow the result value field. The maximum length of a record is 255 characters.

Result.txt

This file contains the results of the update process and is located in the \Gate folder. It is formatted exactly the same as the update.txt file. Normally, all information is transferred from the record in update.txt and the only field that the access control/alarm software fills in is the result value. However, if the management software has issued a query for a unit's status, then the other fields should be filled in with the information from the access control/alarm database.

Errors.txt

This file will contain one line with three numbers separated by commas and ending with a carriage return/linefeed. It is located in the \Gate folder. The file should be generated at the end of each update process. The management software should read this file to determine whether the results.txt file should be processed. If no errors are reported, then no message needs to be displayed for the user. However, the management software could display a summary of the updates. If errors are reported, then the user should be given notification of these errors by the management software. The result.txt file will need to be processed by the management software to determine the specific errors. The format of the notification message is left to the management software vendor.

<i>Field Name</i>	<i>Field Type</i>	<i>Description</i>
Successes	Numeric	Number of successful updates
Warnings	Numeric	Number of updates with warnings
Errors	Numeric	Number of updates with errors
CR/LF	2 characters	Carriage return/linefeed

Errors.log

This optional file will contain additional error or troubleshooting information. It is located in the \Gate folder. This file should be a text file but no particular format is specified.

Update.bat/Update.exe

This batch file and/or executable program should be included with the access control/alarm software. It should have the necessary commands to invoke the update program and be located in the \Gate

folder. Although drive-related specifications are discouraged, it may be necessary for the user to modify any drive-related specifications in the file. For example, if the access control/alarm software is normally installed on drive C:, the batch file may contain references to drive C:. However, if the user chooses to install the software to drive D:, the drive references would need to be changed to D:. If the access control/alarm software is Windows-based, an update.exe program may also be installed in the \Gate folder. This allows Windows-based management software to invoke the update program without reverting to DOS batch files.

Gate.bat

This batch file should be included with the access control/alarm software. It should have the necessary commands to invoke the main access control/alarm program and be located in the \Gate folder. Although drive-related specifications are discouraged, it may be necessary for the user to modify any drive-related specifications in the file. For example, if the access control/alarm software is normally installed on drive C:, the batch file may contain references to drive C:. However, if the user chooses to install the software to drive D:, the drive references would need to be changed to D:.

Update.siz

This file should contain one line with one number indicating the amount of memory required to load the update program. It is located in the \Gate folder. The access control/alarm software should create this file. The management software should make sure that there is enough free memory before invoking the update.bat file. If enough memory is not available, then the management software should display an error message and not invoke the update.bat file.

Table 3 – Update.siz		
<i>Field Name</i>	<i>Field Type</i>	<i>Description</i>
Memory	Numeric	Kilobytes of memory required by update program.
CR/LF	2 characters	Carriage return/linefeed

Gate.siz

This file should contain one line with one number indicating the amount of memory required to load the main access control/alarm program. It is located in the \Gate folder. The access control/alarm software should create this file. The management software should make sure that there is enough free memory before invoking the gate.bat file. If enough memory is not available, then the management software should display an error message and not invoke the gate.bat file.

Table 4 – Gate.Siz		
<i>Field Name</i>	<i>Field Type</i>	<i>Description</i>
Memory	Numeric	Kilobytes of memory required by main program.
CR/LF	2 characters	Carriage return/linefeed

Result Values

There are three types of result values defined by this specification: success, warnings and errors. A success indicates that the update request was processed with no problems. Warnings are considered non-critical and indicate that the update request was processed. However, information may have been missing from the record or the access control/alarm software may have detected some other minor

discrepancy. Errors are considered serious and indicate that the update request could not be processed. A result value of 0 indicates success. Result values from 1 to 49 indicate warnings. Result values from 50 to 99 indicate errors. The following table details the currently defined result values.

Table 5 – Result Values	
Result Value	Description
0	Record processed without error
1	Record processed, default values were used for blank fields.
2	Record processed, no changes were made because the existing database matches the update.txt record.
50	Update.txt not found.
51	Insufficient memory.
52	Record length error or CR/LF not found.
53	Version not supported.
54	Operations code field is invalid.
55	Operation not supported.
56	Unit number field is invalid.
57	Unit number not found.
58	Duplicate unit number not allowed during add.
59	Unit status field is invalid.
60	Password field is invalid.
61	Duplicate passcode not allowed.
62	Card number field is invalid.
63	Duplicate card number not allowed.
64	Time zone/period code field is invalid.
65	Keypad/access zone field is invalid.
66	Start time field is invalid.
67	End time field is invalid.
68	Alert code field is invalid.
69	On-site field is invalid.
70	Alarm status field is invalid.
71	Link number is invalid.
72	Name field is invalid.
73	Network problems.
74	See error.log for more details.
75	Controller malfunction.
76	Unit limit exceeded during add operation.
77	Option not installed.
78	Process was aborted.

Special Considerations

Overview

In writing the universal interface, much effort has been put into making it as generic as possible, allowing all vendors who conform to the specification to communicate. However, there are inevitably going to be certain features or fields that are not supported by all vendors. This chapter details special considerations in using the Universal Interface to interface with WinSen Sentinel.

Adding Units via the Interface

The Universal Interface specification allows the management software to add a unit to WinSen Sentinel by calling for an “add” operation. WinSen Sentinel fully supports adding units this way, but there are some points to keep in mind.

1. When a unit is added via the interface to a WinSen Sentinel alarm system, it does not add the unit to the door table. In this case, a tenant can gain entry via the keypad or cardreader (if the unit is rented), but the alarm will be non-functional until the unit is added to the door table manually.
2. The interface number is not part of the universal specification, only the unit number. Recall that the interface number in WinSen Sentinel is used by the tenant to key into the facility, unless you have the “passcode only” keypads. When a unit is added, the interface program will assign an interface number according to the interface number option selected in Edit|Setups. It does not check if the interface number created is duplicated in the database, or if it is greater than the keypad can handle (65535). Note that the “passcode only” keypad does not have this limitation, because the unit number is not entered into this keypad model.

Defaults When a Field Contains No Data

The Universal Interface specification calls for only three required fields: the version, the operation code, and the unit number. This section explains if and how a given field will be assigned by the WinSen Sentinel interface when no data is supplied by the management software during a transaction.

If the transaction is a moveout, all other fields are ignored, and the passcode and card number are set to zero. **If the transaction is a deletion**, the unit is deleted, even if it is occupied.

If the transaction is a movein or an edit operation, default values are assigned according to the following table.

Note: a movein is assumed if WinSen Sentinel shows the unit as currently vacant, and the “Unit Status” field in update.txt is either blank, **R**, or **D**.

Defaults When a Field Contains No Data		
Field	During Movein	During Edit
Unit Status	Set to “Rented”	Unchanged
Password	Set to 0	Unchanged
Card Number	Set to 0	Unchanged
Time Zone	Set to the user defined default value	Unchanged
Access Level	Set to the user defined default value	Unchanged
Start Time	Ignored	Ignored
End Time	Ignored	Ignored
Alert Code	Ignored	Ignored
On-Site Status	Unchanged	Unchanged
Alarm Status	Unchanged	Unchanged
Link Number	Unchanged	Unchanged
Tenant Name	Set to blank	Set to blank

Unsupported Fields

There are three fields defined in the universal interface that are not used by WinSen Sentinel: the **Start Time**, the **End Time**, and the **Alert Code**. WinSen Sentinel will ignore these fields in all cases.

Interfacing Over a Network

Overview

This chapter details how to setup the WinSen Sentinel interface to function over a LAN (Local Area Network). The interface will function over a server based LAN such as Novell Netware, or over a peer-to-peer LAN such as a Windows 95/98 network.

Note: you must have the network version of WinSen Sentinel to enable network functionality. Call Sentinel Systems for more information.

The Gatetest Program

The Gatetest program is used to configure and test the interface over a LAN. To run the Gatetest program:

1. Select the Windows “run” option.
2. You will be asked for the “Command line”. Type in `c:\WinSen\gatetest` then click **OK**.

The following dialog box will be displayed:

Action

From the drop down list, select the interface action to be performed. The choices are:

- Assign Tenant - performs a move-in transaction.
- Moveout Tenant - performs a move-out transaction.
- Change Passcode - performs a change passcode transaction.
- Lockout Tenant - performs a lockout transaction.
- Re-admit Tenant - performs a re-admit transaction.
- Test Function - tests the interface. This function is not supported by all gate systems.

Gate Interface

Select the WinSen Sentinel gate interface from the drop down list.

Parameters

This field is unused for testing LAN functionality.

Unit Number, Passcode & Card Number

Enter the unit number, passcode, and card number to be transmitted to the access control system. Note that this information defaults to the values shown in the example, but you can change it if desired.

Time Zone & Access Level

Enter the time zone and access level to be transmitted to the access control system. The program defaults to “0” for both but you can change these if desired.

Computer Name, DDE Link Field

These fields are displayed only if you have the network version of WinSen Sentinel.

These two fields are used when interfacing to WinSen Sentinel over a LAN (Local Area Network). To successfully link from one workstation to WinSen Sentinel on another, you must enter the Computer Name where WinSen Sentinel is running. The Computer name is found in the Windows Control Panel\Network dialog. In addition, a program called "NETDDE" which is supplied with Windows for Workgroups or Windows 95/98 must be running on both computers. It is recommended that you place a shortcut to "NETDDE.EXE" in your "Startup" folder.

The DDE Link Field does not need to be filled in. When you transmit a test transaction to WinSen Sentinel as explained in the next section, this field will show the data sent to, then returned by the program.

Network Setup Procedure

1. Make sure that NetBIOS is enabled on all workstations, and that they are all running NETDDE as described above.
2. Install the WinSen Sentinel interface on all applicable workstations. When installing on a workstation, make sure it is installed to the network drive. On the file server for a peer-to-peer network, it is installed to the local hard drive.
3. Run WinSen Sentinel on the target workstation. This will be the workstation which is connected to the access control/alarm system.
4. On the source workstation(s), run the gatetest program. Set the interface to WinSen Sentinel. In the Computer Name field, enter the name of the workstation where WinSen Sentinel is running. The name cannot have embedded spaces.
5. Try a test transmission to verify that the interface works. Note: the Microsoft Hearts game uses a similar NetDDE connection; if you can get MSHearts to work, the network interface to WinSen Sentinel should also function correctly.

Customer Information Fields

These fields contain information relating to the sample customer for testing purposes. The information is used only with certain systems. If desired, you can edit the information if you select an access control system from the **Gate Interface** field that uses it.

Transmit Button

Click the transmit button to test the interface. The program will attempt to interface to the currently selected gate system with the options you have chosen. If an error is encountered it will display an error message as appropriate.

Close Button

After successfully configuring your gate interface, press the Close button to save your changes and exit from the Gatetest program.

Glossary of Terms

Access Levels

Access levels are used in WinSen Sentinel to restrict tenant's access to certain parts of your storage facility. For example, you can designate that the "RV storage area" is accessible only to certain tenants. Access to the area must be controlled by a keypad or cardreader.

Interface Number

The unit number used by WinSen Sentinel for keypad entry and for alarm system purposes.

Time Zones

Time zones are used in WinSen Sentinel to define your tenants gate hours. The hours for a time zone are specified in the Time Zones option in the WinSen Sentinel Maintenance menu. Each tenant is assigned a time zone, for example "Time Zone 0". That tenant can then access the facility only during the hours specified for time zone 0.

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