Programmer's Guide
And
Internationalization Options

Web+Center
Version 6.0
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Chapter 1 Introduction

Welcome to the Web+Center Programmers Guide. To help advanced Web+Center user to expand, customize or integrate the Web+Center web-based support suite into their own support and business processes, we determine that a *Web+Center Programmers Guide* was necessary for advanced users who wished to exploit the customization features of the product.

Web+Center does not have to be customized by programmers to be operational, and this guide should only be referenced by very technically capable Web+Center administrators and configurators who wish to expand the functionality of the product or perform some customizations required for their support or business processes.

This guide is designed for Web+Center users who are capable of customizations to the product using the ASP (Active Server Pages) programming language. User must also have some knowledge of databases, tables and the SQL query language.

Customizations, enhancements, and any changes made to the software **will not** be supported by Internet Software Sciences for licensed or un-licensed customers.   If necessary, the ISS Consulting Group can provide fee based consulting services to help develop and or debug your changes if necessary.

Any changes you make to the system must be integrated by you if new versions are released. Included in this document are suggestions on how to minimize the changes that would be required when integrating a new Web+Center version with your system if you have made changes.

Included in the Appendix is a list of related on-line and book based programming guides we recommend for learning the ASP programming language.

Chapter 2 Database Tables, relationships and tools

The Web+Center product is a web-enabled database application. Web based scripts written in ASP (MS Active Server Pages) form the code base to the Web+Center application. The application scripts performs database lookups, inserts, deletes and updates against the database and then outputs the necessary HTML based pages back to the individual users browser.

The database consists of tables which contain columns which hold the Web+Center data. The database is the central repository for all of the web+center information and system configurations. Changing any of the tables, columns or even the data itself may cause database problems including referential integrity and user application errors.

Since the application is designed around the existing database tables and column, the database design (tables or column design definitions or even data) should NOT be modified by the user. If additional information is required, it should be stored in new database tables that you add to the Web+Center database. If you need to relate the new data to the existing customer, case or tech data, it should be linked to existing Web+Center data by using appropriate key indexes. This will also help when upgrading to new Web+Center versions in the future. New columns can be added to existing tables, but do not rename or delete any existing webcenter database tables or columns.

Table 2-1 lists all of the Web+Center 5.0 tables and their description

Table Name	Description
AssetAssigment	Asset assignment for customers, techs, other assets
Assets	Individual Asset information
Bconfiguration	Business+Center configuration information
Cases	Case Information
Case_Text_Field_Labels	Optional case text box labels
Categories	Categories for cases
Configuration	Web+Center system configurations
CustomerNotes	Additional customer information and customer note logs
CustomerTechAssignment	Business+Center Contact Rep customer assignments
DeleteList	Customers that have requested not to be sent emails
Email_Text	Text for automatic email notifications to customers/techs
EmailCategory	Customer user categories
EmailCategoryLinks	Normalized table showing customers and user categories
EmailText	Email Messages that can be sent from Business+Center
Email_text	Notification messages text and TechCenter User Screen
Escalation	Escalation configuration options
Event_Attending	Normalized table showing attendees for scheduled events
Event_Type	Types of events
Group_List	Staff Member Group Assignments
Groups	Group Definitions
KBConfiguration	Knowledge Base Configuration options
KBMap	Knowledge Base Word Mapping
KBWords	Knowledge Base Words defined
Priority	Priority Definitions
Result_Detail	Customer Surveys Detail Results Table
Schedule	Calendar events scheduled
Survey	Master customer survey table
Survey_Results	Results of customer surveys
Tech_Staff	Staff Member table
Top_Cases	Stores the Customer FAQ list of cases
Invoice	Stores Invoice Information
InvoiceType	Defines Invoice types (like invoice, quote, renewal)
InvoiceStatus	Define Invoice Status types (paid, due, late)

PaymentMethod	Defines Payment Methods (Cash, Purchase order, etc)
TimeSpent	Stored Extended Time Spent entries for cases
	Version 6.0 tables
TextAgentAvailable	Text Messaging table to record available techs for msging
TextChat	Stores Txt chat Messages
Companies	Separate companies table to sync company/customer info
Pnotes	Private notes field (viewable by techs only)for support cases
Media_type	Reservation+Center catalog types
Media_Schedule	Reservation+Center scheduling of equipment
Media_Inventory	Reservation+Center equipment inventory

Table 2-1 Web+Center Table Definitions

The 40 Web+Center database tables are constructed within a Relational Database Management System (RDMS) such as Access, or SQL*Server, that allows for relationships and efficient querying access to the data. The database has been constructed for 3rd normal form optimization for query efficiency and data storage optimization.

Database View, Design and Access Tools

The tables can directly be viewed and edited using tools provided with Access or SQL*Server. We do not recommend you use these tool for editing any table information, since there may be application specific filtering and database creation algorithms that are done by the application that will not be done if you directly add, edit or delete data from the database. The DESIGN of the tables and columns can also be viewed and modified with tools provided by the Database vendor. We highly recommend you DO NOT modify the design or structure of any of the database tables.

The Web+Center application also provides a low level, web-based, direct table view tool in the Business+Center application under Business+Center Administration. This option, called the Web+Center Table Builder, is only available for System Configurator level users that have logged into the Business+Center.

To access the Web+Center table builder, log into the Business+Center with your System Configurator account and press the Administration button. Then click on the Web+Center Table Builder Menu option to view or edit the Web+Center tables.

This Web+Center Table Builder is only meant to display and perform table edits for special situations. Editing, adding or deleting a table column without understanding all of the implications can cause some database referential integrity and potential application errors. Use this tool with extreme caution.

Another tool for viewing data exists under the Tech+Center administration called the database snooper. This is a read only query tool that can be used to directly view the contents of the database.

Chapter 3 Directories, files and files types

Directories:

The Web+Center application is installed into 9 directories consisting of:

Techcenter – The directory for all of the Tech+Center application code and graphics

Customercenter – The directory for all of the Customer+Center application code.

BusinessCenter – The directory for all of the Business+Center application code.
Pocketcenter – The directory for all of the Pocket+Center application code.

Database – Contains the Access seed database (webcenter50.mdb) and the SQL scripts to create the SQL*Server seed database and the Linux mySQL database.

Language – The directory for all of the Web+Center labels and buttons graphics. All of the definitions have been placed into this directory for easy language text substitutions and internationalization of the Web+Center product for languages other than english. Labels and graphics are all located in this directory so they can be easily shared between all of the Web+Center applications.

ASP Mailer – Contains the Licensed ASP mailer from Email Architect. This aosmtp.dll is installed and registered when the Web+Center application is installed. This ASP mailer is not an SMTP program that will compete with exchange or any other SMTP mail server on that machine. Sometimes this aosmtp.dll ASP mailer must be system registered into the system by running the "regsvr32 aosmtp.dll" command inside of the ASP mailer directory.

Reservation –This directory contains the ASP code for the Reservation+Center. The Reservation+Center is a fifth component in the Web+Center suite of web-based applications. This component allows techs and customers to reserve equipment, media devices and facilities from a catalog of resources in a true reservation system approach of scheduling and reserving based on availability of that resource.

ProgramFolder –This directory contains the HTML files and images for the Program.. Applications start page for the Web+Center application. If you want to launch Web+Center from the program application, the files for that method are defined in this folder.

When the Web+Center is installed, it is installed by default into the Program Files folder like:

C:\program files\Internet Software Sciences\web+center 6.0

Wctempfiles – This folder is a special folder to hold temporary files that are created for web+center calendar functions. Calendar files are placed into this directory and a link is created to retried that file out of this directory. This allows the application to create the exact file type (such as vCalendar file type) and lets the user click on that link and it will automatically be processed by the browser based on the application file name extension and rules setup for handling different types of files.

The four Web+Center application directories *(Techcenter, customercenter, pocket and businesscenter*) contain a combination of the following types of files:

*.asp	Active Server Pages Scripts
*.gif	GIF web graphics
*.inc	Activer Server Pages INClude files included by ASP module
*.jpg	JPEG web graphics
*.dll	ISAPI (Compiled C++) DLL
*.htm	HTML files

Each of the applications require a virtual directory to be establish and will have a default "home page" with a file called default.asp or default.htm which the webserver configured as the default page for a particular virtual directory. Most of the web+center applications default home page uses an default.asp page as the primary page, but a backup default.htm page exists that does a quick redirect to default.asp if the default.htm page is picked up first. The default.asp allows more programming options for the first login page so with version 6.0, the default pages have been to default.asp.

For example, the Tech+Center home page that is accessed when you enter the URL of

        http://<hostname>/tech60/ will display the default.htm page in the techcenter directory.

The database directory contains files:

*.mdb	Web+Center Database in Access 2000 Format
*.sql	SQLServer or mySQL scripts to create Web+Center Database
*.asp	Some database upgrade scripts.

The language directory contains *.inc files and graphics that are referenced by all of the 3 Web+Center applications.

The Program Folder Directory
        This folder is created to allow the users to run the program from the Program..
start menu.

Determining which script is called

To determine which ASP or DLL script is being called, review either the link in the
Browser URL window, or the URL link as you move over the link. For HTML form
based pages, one will have to perform a View Frame Source File option or a View Source
option on the preceding HTML page and search for the <form action=….> HTML tag.
This will tell you what page the form is calling.

The basic file naming convention is that first form page for a particular function like
registration is called "registration.asp". The following HTML submit processing page for
that form is called "DoRegistration.asp", where the word "Do" has been added in front of
the preceeding ASP file name. Many of the ASP File names can be found by "mousing
over" the button panel and viewing the URL listed at the bottom of the browser.

All of the ASP scripts (*.asp and *.inc) are ASCII based files that can be edited with a
plain ASCII editor such as NotePad or Textpad. **Do not edit these ASP scripts with an
HTML editor such as DreamWeaver or a word processor like Microsoft Word. We
recommend the TextPad editor which can be downloaded from the web at their
website:** http://www.textpad.com.

Chapter 4 ASP Programming and customizations and Upgrades

One of the advantages of the Web+Center Customer Support/Help Desk Product over
other web-based support products is that it is customizable to a very large degree since
we provide you all of ASP scripting source code for the application and document the
complete database architecture and software designs.

The Web+Center application is written in ASP (Active Server Pages) (Visual Basic)
scripting language. The only part of the Web+Center application that is not written and
modifiable by the user is the Web+Center License key technology. This tiny piece is
written and compiled in C++ and can not be modified by the end user.   This compiled
component is only accessed when adding technicians to your system or during periodic
checks on the techs and license keys for compliance.

Active Server Pages (ASP) scripting technology that comes installed with the MS
Internet Information Server (IIS) is almost equivalent to Visual Basic.

The ASP web scripting language is very easy to learn, easy to debug, and very fast for
development and deployment of customizations to the Web+Center product.

What makes this language easy for development is its error reporting and error parsing that instantly tells what module is at fault, the line number where the run time or parsing error occurred, and it will even point out where in the line the error is found.

To make changes to the code, simply edit the ASP file (registration.asp for example) with your ASCII editor, edit and save the change. The next time that ASP script is reference by the web, the modified script will be called and executed. No compiler or compilations are required.

ASP modules are combinations of HTML code and embedded script code. The script and logic code is separated from the HTML code with the special code delimiters tags like "<% and %> tags.

For example, a simple ASP file that writes 15 numbers to the page might be:

```
<html>
<head>
</head>
<body>
Here are 10 numbers created by an ASP script:

<% ' Here is the code
For I = 1 to 15
        Response.write (I) & ","
Next
%>

That's it !
</body>
</html>
```

This would display an HTML page that looks like

Here are 15 numbers created by an ASP script: 1,2,3,4,5,6,7,8,9,10 That's It!

The VB language is a fairly functionality complete programming language that is sufficient to customize your Web+Center application for your particular business requirements.
There are numerous resources on the ASP programming language available on-line or in book format. Here is a very short list to get your started.

On-Line Websites about ASP programming:
       http://www.w3scripts.com/asp/
       http://www.learnASP.com
       http://www.asplists.com

http://www.aspwire.com
http://www.coveryourasp.com
http://www.aspguild.org

Lists of many ASP site
http://www.learnasp.com/links/

Books:

Active Server Pages 2.0 or 3.0 by Wrox Press
ASP in a Nutshell by O'Reilly Press
VB Script in a Nutshell by O'Reilly Press
VBA for Dummies Quick Reference (VBA guide but close to VB Script)

The book Active Server Pages Professional by Wrox Press is really overly complex unless you are already very proficient at ASP programming and the Beginning Active Server Books are more than sufficient to learn and implement custom ASP solutions for Web+Center.

Customizations:

Making Small customizations: If you need to make small customizations to the ASP code, we recommend you make the change and then a very searchable, unique string in a comment line above that customization like:

'*** COMPANY XYZCHANGE***
'   response.write "Display message'
response.write "New Message"

Finding Differences you have made:

Then when upgrading when new versions are required, you can use some entire directory search text utility (like the search mechanism in the free ASCII editor called Textpad available from www.textpad.com) to find all changes you have made in a particular directory so they can be copied and pasted into the new application code for upgrades.

Using a Source Code Difference Tool:

It might be necessary to compare your existing ASP file(s) and the new versions of file and to easily highlight the differences. Some special tools are available that make this difficult task fairly easy. One tool that is available for free from the Internet is called WinMerge. It is available for download from http://www.winmerge.org.

Another utility called WinDiff can be found with the MS Visual studio set of utilities and can be used to compare files and directories and identify differences.

Making Larger customizations:
The easiest approach to creating new Web+Center ASP code is to copy and paste existing Web+Center modules into new modules (rename) that you create and then modify. Existing Web+Center modules have the necessary overall ASP/HTML structure, and database connection code, security and permission code, and include some required basic configuration files.

Once you create, test and debug a new module, you can link it to the existing site in several ways. In the Tech+Center application, there exists a hidden "Custom" button that you can enable by replacing that clear hidden Custom button with a regular button. A blank button called (blank_button.gif) is available in the Tech+Center directory. Using a graphic tool of your choice, one can put the lettering on the blank button graphic and then rename your newly created button ts_custom_button.gif to make it appear in the button panel. With version 6.0, there is now an customer button builder available in the Tech+Center administration to create your own buttons that have the look and field of the Web+Center 6.0 application.

If you edit and modify the ASP modules, the next time you upgrade to another version you will need to merge in your changes into new version.

Checking for Software Updates:

To determine if your installed Web+Center ASP modules are the most current or not with the most currently released software, ISS has developed a special *Version server* and each version of Web+Center comes with companion software to check your installed versions against the currently released version. To run this file version check utility, run the script call CheckVersions.asp which is located in the each of the Techcenter, customercenter, pocketcenter, businesscenter and language directories.

For example, to check if you Tech+Center application is current, with your browser run the URL:

       http://<your host name>/tech60/checkversions.asp
The other applications versions can be checked by running:

       Customer+Center:
       http://<your host name>/customer60/checkversions.asp

       Business+Center:
       http://<your host name>/business60/checkversions.asp

Pocket+Center:
http://<your host name>/pocket60/checkversions.asp

Language Directory:
http://<your host name>/language60/checkversions.asp

Reservation+Center Directory:
http://<your host name>/reservation60/checkversions.asp

This will provide a report showing what files are newer, older or modified by you. You can individually download and install versions that are out of date by clicking on the appropriate file name link.

Once you have downloaded the file, you will need to compare it to your existing version and if necessary integrate your custom changes into the new module. There is a tool called "WinDiff.exe" that comes with the MS developers tools that provides a good line by line file comparison utility to help merge in any changes. Also the tool WinMerge from www.WinMerge.org can be used to compare differences.

If you plan on doing extensive changes to a module, we recommend that you copy and paste the whole module into newly renamed module, maybe a module name that has your company or organization name it like *RegistrationMyCompany.asp*. Then make all of your changes to that module.

Then search the ASP files in that directory that are called the original module (registration.asp for example) and modify the pages that call Registration.asp to now call RegistrationMyCompany.asp. The TextPad editor available from www.textpad.com has "Find In File" feature to make this search across the entire directory easy to find.

Another option if you plan on doing extensive modification or even new ASP code to perform functions not already provided by Web+Center code base is to create and test the new code and then add a link or button to that module from somewhere in the application where it is appropriate.

Additional Tech+Center reports can also be added to the Report.asp or the custom reports page module by simply adding another link to the reports.asp or customreports.asp file.

Chapter 5 ASP Page Security systems and monitoring options

All five of the applications (Tech+Center, Business+Center and Customer+Center, Reservation+Center, and Pocket+Center) use a cookie based method of login security.

When a Tech Staff member, Business+Center user or customer logs into the Web+Center application, the application sends an browser based "Cookie" back to user web browser from the server that authenticates the user if the correct Login ID and password were passed in the Login form. This cookie is unique for each of the applications and does not allow a user to run mutiple Tech+Center or Business+Center logins at the same time. with the same browser.

As each Customer+Center, Business+Center or Tech+Center page is executed, it first checks that the user has previously successfully logged into the application by checking for the correct "Cookie". For some Tech+Center applications, it not only checks for the Login cookie, but it also check the security level for that user by checking with the database to get the current security settings. For example, when the Tech Staff member runs the reports page (reports.asp), it check for the cookie and then performs a database security level lookup on the logged in user and verify that the user is at least Administrative level. For certain Tech+Center pages including reports, administration and configuration pages, the user must have "Administrator" or "Configurator" level accounts. If the program detect that this page is attempted to be called by either an un-authenticated user (no cookie detected) or if the user does not have the right security level, a special INVALID USER page will be displayed to the user.

The invalid user page will display large red text to the user about the access violation. If you wish to edit the text that is displayed when this error occurs, edit the invaliduser.inc file with your own security access message.

The toptions.asp page in the techcenter directory is the ASP module that displays the button panel in the left hand side of the Tech+Center application. Inside of that module are the definitions to control which buttons appears for which security level (configuration, administrator, tech,etc) of the logged in user. The boptions.asp is the similar module in the businesscenter directory to control which buttons appears in the business+center application.

Another option if users attempt to access pages they are not provided links to is to enable some email logging options in the invaliduser.inc page. Simply add some code to create an email message that specifies the page that is being attempted to be accessed, the user ID (obtained from the cookie) and time and date of the access violation. Once that message is created, send off an email to Web+Center administrator using the SendEmail() function that is provided for you in the invaliduser.inc page.

You could provide additional information by grabbing the IP address of the user if the user does not have their cookie set properly and they are still attempting to access pages they do not have permission to access.

When a user logs in, they should only be shown buttons and links that they have permission to use and users should not get this page without hacking attempts. If a user book marks a page within the application, and closes the browser and comes back they

will also get this error page. Users should be told not to Browser book mark pages within the application since the call on server may change without notice to the end user. Cookies will automatically be lost when the browser is closed or if they press the Logout option. Web+Center Cookies are not saved in the disk based cookie files (like cookies.txt) since we tell the browser to save them only as long as the browser session is active. This provides a fairly good level of security from persons attempting to duplicate a logged in cookie setting.

Browsers must have their "cookies" enabled for any of the applications to work. A Tech+Center user will experience three frames with errors if cookies are not enabled on the browser.

There are no other cookies that are set by the Web+Center application besides these Login ID cookies.

To monitor and log web pages hit by users, enable the Web Server logs or the Extented server logs. Every HTTP request for ASP pages, or graphics will be defined in the web server logs. Enabling web server logs is available in the Default WebSite Properties window near the botton. Check the Enable Logging option and select anActive Log Format from the choice of logging options available.

Chapter 6 Importing data into the Web+Center Database

One of the benefits of the Web+Center Help Desk product is the open architecture and straight forward design of the database and the application. The table names, columns and database relationships are meant to be self documenting for those that wish to integrate custom applications into the Web+Center suite of products.

Although the tables, columns and relationships are easy to understand, certain rules and data requirements must be followed to ensure database consistency and maintain database referential integrity. Referential integrity is lost, for example, when a customer record is deleted, but other records who have customer_ID keys pointing to that customer record still exist.

We DO NOT recommend you import data into your Web+Center database table using import filters provided by Microsoft or other vendors. Instead of using tools provided by the database vendor, we recommend you use or create new ASP "scripts" that directly connect to the database tables and then modify and insert the data into the database as needed on a record by record basis. This allows for far better control of the data being inserted and you can add additional logic to set default fields to certain values when special conditions exists. Special Import scripts have already been developed for importing Customer Records and Asset Records.   Additional information about these scripts is listed below.

Importing Customer Records

The best way to import external customer records into the Web+Center database is to use the web-based Import Customers Wizard which can be launched by clicking on **Administration… System Configuration Menu and Import Customers Wizard link.**

Before you launch this customer import utility, you must first create an ODBC compliant database of your external customers with first name, and last name as the minimum. To run this script, you must have the name of the ODBC DSN and the name of the table where your external customer are stored.

Before running this script, one should back up the database incase the script does not properly import records and you need to start the import process from the beginning.

It is recommend you attempt to import a few records first before importing an external database.

The Import Customers Wizard is designed to used in both a new import of customers as well as an update of existing records and the software provides options to determine if a duplicate record should be created or a record updated.

This utility consists of three scripts named ImportCustomers.asp, DoImportCustomers.asp and DoImportCustomers2.asp and it is located in the Techcenter physical directory.

Other Customer Import Scripts:

Internet Software Sciences has also written 2 other customer import scripts that exist in the Tech+Center (techcenter) directory. Customize or review these scripts for information on how to create and perform proper customer record imports.

The two scripts (ImportFilter.asp) and (ImportLDAP.asp, DoImportLDAP) are a starting point to develop your own customer import code. Open up the scripts using an ASCII editor and review, edit and customize them to your requirements. They will not run properly without your customizations. **Before running any imports, back up your database completely and be prepared to run the import process a few times before you get it working correctly.**

The ImportLDAP.asp and DoImportLDAP.asp scripts were originally created to import a table of customers created by an LDAP export. This script will still work for other customer imports as well.

Customer records are stored in the "Customers" table. The only required field for this table is the customer_id field, which is a 20 character text primary key field. This field is created in the Web+Center application as the customer's Last Name + "underscore" + First Name. For example, if Mary Smith were the customer's name, the customer_ID field created for that customer would be: "Smith_Mary". If there already exists a Mary Smith in the database, the application will add a 3 digit random number at the end of the

string to create a unique Customer_ID index. This Customer_ID field is required and indexed and must be unique. Although the other fields are not required at the database level, we recommend, as a minimum, populating the contact_fname (first name), contact_lname (last name) and email fields with information when performing any imports.

Another way to import customer records is to use the LDAP integration method when your customers are all located in an LDAP or active directory. Please refer to the Active Directory integration and configuration guide in the documentation directory.

Importing Asset Records

A script called ImportAssets.asp exists in the \techcenter directory.   If you plan to do any asset information, we recommend you use this script. It will be need to be customized to your individual asset column naming conventions.

The table that the asset information will be inserted into is the *Assets* table. This table is driven by an Auto-number Integer primary field key called Asset_Number. As soon as you attempt to insert a new record, a new asset_number will be created for that asset.

This table has one required integer field called "dummy" and it must be filled in with some integer value when inserting new records. This field exists to maintain compatibility with previous versions.

Although the other fields are optional at the database level, we recommend populating the equipment_type field as a minimum. If you put any information into either the property_tag, ip_address, serial_number, monitor_serial_number or the computer_id fields, they must be unique values or left as NULL. These fields are indexed and must be unique. You will get a database insert error if this unique condition is not met on any of these fields.

There are also 5 custom asset fields (custom_field1… custom_field5) where you can store information that does not match the current asset column definitions. To change the label in front of the field, simply edit the AssetInfo.asp ASP module with your field names.

Asset assignments are stored in a separate table called AssetAssignment. You must first add and obtain the index (asset_number) for the asset before you can assign the asset to a customer, tech or to another asset. To assign an asset to a customer, insert the original asset and obtain the asset_number created by the auto-number feature of this field. Then add a new record into the AssetAssignment table setting the Asset_number field to the newly created asset_number, and setting the customer_id field to the customer_id of that customer.

Importing Cases

We currently don't provide any case import scripts but case imports can be created using the existing customer import scripts and editing the script to handle case imports rather than customer imports.

Importing cases is fairly complex since you can only add case records with a valid Customer_ID field and there are required fields, and special date/Time formats required.

The case table is driven by the case_number field which is an auto-number integer primary key field. There are 6 required fields that must be populated when inserting a case record. If one of these fields are blank, you will get an database error and the record will not be inserted. The required fields are:

Customer_id – key back to customers table for customer. If you are importing previous cases without association to a specific customer, set this to a generic customer_id that you create in the database first.

Open_date – this is a required text field that stores the date the case was first opened or created. It must be in the format of YYYYMMDD where YYYY = year, MM = month, and DD is day (01-31).

Open_time – This is a required text field that stores the time the case was first opened in the format of HHMMSS where HH = hour (01-23), MM= minutes (00-59) and SS=Seconds (00-59).

mod_date – this is a required text field that stores the date the case was last modified or for new cases, the date it was created. It must be in the format of YYYYMMDD where YYYY = year, MM = month, and DD is day (01-31).

mod_time – This is a required text field that stores the time the case was last modified or for new cases it stores the time open_date time. This field is in the format of HHMMSS where HH = hour (01-23), MM= minutes (00-59) SS=Seconds (00-59).

Group_ID – This stores the Groups_ID that points to the Group defined in the Group_ListTable. Every case must be assigned to a group. By default, you should assign it to the group defined as the "default" group. The Default group is group in the Group_List table that has the default_flag field set to 1. Only one group should be defined as the default group. This field can not be NULL.

Although not required at the database level, the following fields should be populated when importing any case records. Also, it may be necessary to parse the longer case detailed history information to remove any HTML Tag characters or special characters that may cause the HTML form to fail when the text is displayed by the browser. Also, the size should also be limited to the MaxCaseHistorySize variable in the configuration file.

Case_one_line – This is a text field describes the problem in 100 character or less.

Case_history – This is a memo type field that holds the running log with the detailed information about the case. Special characters sequences format the text into Red and Green fonts which make it more readable. Review the DoTCaseform.asp module to see how case history text is formatted with information on the date, time and user information.

Status – This should be set to one of the integer values below. It should not be left empty or NULL.

Valid Case Status Numbers
0 = Open (Active)
1 = Closed
2 = Open (Waiting)
3 = Open(On Hold)

A case can either "Open" (case status 0,2, or 3) or "Closed" (case status = 1). There are places in the code where we only determine if the case is Closed (status=1) or any Open state (0,2,3).

Severity (referred to as Priority) – This is an integer field that should be set to "0" if the priority is un-assigned, or to a value from 1 to 10 with 1 typically defined as the highest priority. The priorities are defined in a separate "Priority" Table. Only populate your cases with priority values that exist in the priority table.

Modified_flag is integer flag field that is set when a case is initially created or modified by the customer and then reset when the assigned Tech Staff member reads (opens up) the case ticket. The Tech Staff member does not have to update the case but only needs to view the case ticket to reset this field back to un-modified (0). This flag is used to enable the cases to appear in red font in the Open Cases windows so technicians can immediately identify cases that are new or updated. Set this to either 1 (modified) or 0 (un-modified or reviewed).

Category Fields C1, C2, C3, C4, C5…C100

The fields C1, C2, C3… C100 hold the category setting for each of the categories for that case. They should be left as NULL or set to 0 for the N.A. (Not Applicable) setting, or to a valid Category_ID for that category number.

Categories and their corresponding sub "category items" are defined in the Categories Table. The example table below shows how the Categories_table would be populated with two categories each with 3 category items.

Category Table Entries

Category_Number	Item_number	Category_name	Item_name	State
1	1	Operating System	Windows NT	1
1	2	Operating System	Windows 2000	1
1	3	Operating System	Linux	1

2	1	Computer Type	Dell	1
2	2	Computer Type	Compaq	1
2	3	Computer Type	HP	1

Figure 6-1 Example Categories Table

The table above defines two categories that will create two category drop down boxes in the case form for the customer and tech staff member. The first category drop down box will be labeled *Operating System* with "Category Items" of Windows NT, Windows 2000 and Linux.

If a user selects the Windows 2000 item from the drop down box, the application will save the item number (2) into the C1 column in the case table. The column C1 is mapped by combining "C" plus the Category Number to create "C1".

The database can store up to 100 categories although we don't recommend using more than about 4-6 categories since the users or tech won't fill them out at all if there are too many. Any category column (C1… C100) in the database not set to a category item value should be defaulted to "0".

If you create an import script that set category values, you must analyze your categories table to determine the Category_Number and Item_Number values. There is example category setting code in the DoTCaseForm.asp module in the TechCenter directory. browser run the URL:

Chapter 7 Version Information and reporting Problems to ISS

If you feel you have found a bug in a particular ASP module, check the Version Server to see if a new version of that file exists. If the CheckVersion.asp script determines that a newer version is available, backup your current version, and replace that file with the new one from the version server.

Each major release (2.0. 3.0, 4.0 5.0 etc) of Web+Center will have its own CheckVersion.asp script that will reference updates in that release. The current major release version is 4.0.

When version 5.0 is released, user must perform a full upgrade to 5.0 before they will be able to access the 5.0 version server.

Upgrades:

To upgrade from version 5.0 to Version 6.0 requires a special upgrade script that is NOT part of the FREE (2) tech system package. License users must have a current support/upgrade contract to obtain the necessary upgrade script to upgrade the database from the 5.0 to 6.0 database structures and still keep all of their existing information.

Free (2) tech user must purchase a one-time upgrade script that will enable them to upgrade from 5.0 to 6.0 database structures.

To report problems to ISS, use the Web-based support option available on the main ISS support page (*http://www.inet-sciences.com/support.html*).

Chapter 8 Graphical and User Interface Changes

The Customer+Center provides two modules that are designed to be customized by the user to integrate their website look and feel into all of the Customer+Center pages. If you want to add banner navigation and footer links to the Customer+Center pages, do not edit the individual pages, but simply edit the **CCHeader.inc** and **CCFooter.inc** files with your customizations. You should be able to copy these pages into future versions for immediate compatibility with your current site. Graphics can also be replaced by your own graphics and the graphic files can be easily copied over. Refer to the User Guide and Getting Started Guide for more information on customizations.

The Business+Center also provides a similar set of modules named bcheader.inc and bcfooter.inc. These files will control the banner and footer content for most of the Business+Center pages.

Also refer to Chapter 13 for more information about how Web+Center Version 5.0 using cascading style sheets to control fonts and styles.

Chapter 9 Migrating from Access to SQL*Server/SQL 2000 Databases (For 3.5, 4.0 Versions only)

The Web+Center application can be run with either the Access back-end database or a SQL*Server database. If you started with the Access database and wish to migrate all of your existing Access database to SQL*Server, we recommend you use the special database migration scripts written specially for this purpose. We recommend you **DO NOT use the SQL*Server data export wizard** to convert your database from Access to SQL since those scripts will not perfectly transfer all of the keys, constraints and other important database information and it is very difficult to attempt to fix up the database using this method.

To migrate from an Access back-end database to a SQL*Server Web+Center database, launch the script in the Tech+Center (Tech40) directory called ConvertToSqlServer.asp. This page will display explicit instructions on how to perform the conversion. Plan on about 30 minutes to perform and test the conversion. Perform this conversion when users are off-line so data is not lost during the conversion. Be prepared to revert back to Access database if your conversion is not successful.

Once the conversion is complete, there are no methods to go back to the Access database since there are NO scripts for converting from SQL*Server back to Access formats.

We typically recommend moving to SQL*Server if you have more than 20-25 techs using the system on a consistent basis or if you are running into other performance issues. You must separately purchase your SQL*Server/SQL 2000 license.

Chapter 10 Customer Authentication Login Methods

Customers log into the Customer+Center by providing a Login ID or customer username and a password. Two optional method exists if all of the users are authenticated NT domain users.

The first is a fairly complex but complete approach to integrating Active directory users and the web+center customer database. Please refer to the separate Active Directory Integration and configuration guide available in the documentation directory for complete information. This approach provides automatic download of information from active directory in the web+center customer database and automatic syncing of information from AD to web+center customer database.

If you are looking for just login without automatic customer information retrieval and sync, follow these steps below:

Put your users NT login name into the customer_username field in the Web+Center customer database. The Web+Center customer_username field is limited to 20 characters. You can enter this information into the customer record using customer import tools like ImportLDAP.asp and DoImportLDAP.asp or the new customer import utility or they can be entered individually in the Tech+Center.

Change the file permissions on just the DoAuthLogin.asp file in the customercenter directory and set the permissions for this file to just domain users.
Create a web link to this file like http://<ip or domain>/customer50/DoAuthLogin.asp

The Internet Information Server Default Website Directory security must be set up for Integrated Windows Authentication as well as Anonymous user access. This is the default setting for the default website but that setting can be confirmed by selecting properties for the default website, clicking on Directory Security and click on the Edit button for the Anonymous access and authentication control. Confirm that the Anonymous access checkbox is set and the Integrated Windows Authentication is check in the Authentication access area.

This page login script works by grabbing the LOGON_USER value from the HTTP headers and using that for the Customer+Center login customer_username. This field is then checked with the Customer+Center Customers Username field. If it exists, then the user will log into the Customer+Center.

If you are having difficulty getting the DoAuthLogin.asp authentication script to properly run, try opening up the ASP module with an ASCII editor and un-commenting some of the debugging statements in the code that exist between lines 37 and 55 to see what

authentication information is being returned by the server. Sometimes full domain information is returned along with the NT login information and this should be stripped out or handled by some method. Once the script is debugged and working, simply re-comment back those debugging statements.

Chapter 11 Customizing Web+Center Labels and Internationalization Options

Starting with Version 4.0, the Web+Center application has the ability to easily change labels on any Web+Center ASP page. All of the labels of the Web+Center are now defined as string variables that are defined in *.inc (include) files that are located in the \language sub directory of the webcenter folder.

In addition to text labels defined in the language directory, all of the button graphics are also commonly located in this language directory as well.

The language include files and the graphics are referenced from the web+center application by two methods. First they are referenced as files using a relative physical directory file approach that goes up one directory from the (techcenter, customercenter, pocketcenter, etc) directory and then down into the language directory using the "parent Paths" method of referencing files. The second approach to referencing language files is through a virtual directory definition called "langauge50". Both access methods are used due to the architecture of ISS and ASP scripting language.

To customize the labels and buttons for another language or to simply change some of the text labels, try one of the two methods listed below:

(1)For English language customers, one may wish to change the labels to another set of words but do not want to change every ASP page code that uses them. In version 4.0, all of the labels are defined in a few label and word definitions files that are located in the language subdirectory. All four of the applications (Customer+Center, Tech+Center, and Business+Center, Pocket+Center) all used the same language definition files so if a change is made to a common label, it is changed for all of the applications.

For example, the case status label of "Open (on-hold)" is now defined as phrase definition in the wclabels.inc include file as:

      wc_Open_On_Hold   = "Open (On-hold)"

To change this phrase definition to Open (Wait for Customer), edit this line in the wclabels.inc file to:

      wc_Open_On_Hold   = "Open (Wait for Customer)"

Now in all of the Web+Center applications that use this phrase, the "Open (On-hold)" label will now read "Open (Wait for Customer)". These language definitions are

included by all (4) of the applications so that any required text label changes only have to be performed in a single location.

 (2) For non english language Web+Center users, the Web+Center can now be converted quickly to an new entire language. In addition to translating the text labels, all of the buttons have been moved to this common directory to allow the buttons to be recreated with translated text. See the table below describing all of the language dependent items that must be converted for a different language.

To convert Web+Center to a new language or if you plan to make extensive language changes, please use the following steps:

Step 1: First COPY and PASTE the whole \language directory into a new directory called "languagebackup" for backup purposes. Make any changes in the original language sub directory since the code will be attempting to reference files in the "language" using both relative file methods and virtual directory definitions. The "languagebackup" can be used as backup to recover original files if needed.

Step 2: Make any necessary language changes to the *.inc (include) files and graphic files listed below in the language directory. When making changes to the include files, only the string value should be adjusted, and DO NOT adjust the variable name.

For example to change the label "Customer" to "Staff Member" change:

>   Wc_Customer =   "Customer"

>   To

>   Wc_Customer = "Staff Member"

Table 11-1 List of Files and graphics for language conversions

File Type or Name	Contents
Wclabels.inc	Most of the web+center language definitions
Wclabel2.inc	More Web+Center language definitions
Wclabelsadmin.inc	Administration Function language definitions
AssetLabels.inc	Asset label definitions only
Table_Builder_Caution.inc	Table Builder Long text note
CalendarDays.inc	Names of days and months
HelpEditCategory.inc	Help instructions for categories
EmailHTMLIinfo	Information on how to email HTML documents
*.gif/jpg (graphics files)	Buttons and other graphics that may content text

Chapter 13 Use of Stylesheets and CSS

In versions prior to Version 5, all screen formatting was achieved purely through the use of "pure" HTML (i.e. through the use of embedded <b> and <font> tags and similar). This "lowest common denominator" approach was used to ensure compatibility with the widest possible set of web browsers including old versions.

With the release of Version 5, the use of Cascading Stylesheets (CSS) has become common in the industry and is supported by all common web browsers. This allows much better use of the limited space and an enhanced User Interface, as well as much easier modification of the UI (colors and sizes of fonts etc.). This is because a modification of e.g. font-size need only be applied to the external stylesheet rather than within each individual program module.

In Web+Center Version 5.0 use of CSS has been incorporated into all the main user-screens, while the old interface may still be found in lesser used screens. However, to maintain maximum compatibility across all common browsers, the use of CSS has been restricted to employing only the most common elements and in a conservative fashion.

While CSS is now employed in the most frequently used screens, not all modules have been re-engineered. The old mechanism is till found in some screens, e.g. those used primarily by the system administrator or error-screens and so forth. The major exception to this is the Pocket+Center which has not been converted to use CSS because stylesheets are not supported by the Pocket PC device.

In each of the other three main applications (Tech+Center, Business+Center and Customer+Center) an externally defined set of styles is supplied in a file (located in each directory) called wc_Style.css. As released, this file is identical in each of the three directories but users can modify one or the other if they wish to modify the user interface for that application. They were replicated across the three directories (rather than being restricted to a single copy for all applications) so that users can make modifications to one of the three major application without it then impacting the others.

Caution should be used in modifying the supplied style definitions in that many of the style definitions are inter-linked in their effects – thus a color in one definition may have been deliberately chosen to contrast well with another for readability purposes. Changing one may cause a change to have to be made to another – and so on, causing a ripple of side-effects.

In Tech+Center and Business+Center external stylesheets are invoked near the beginning of each module (inside the <head> part of the page, usually just after the <title> tag) by means of a line of the form:

<!-- #INCLUDE FILE="Stylesheet.inc" -->

This in turn brings in some code which when executed generates a line in the web-page of the form

<link rel='stylesheet' href='wc_Style.css' type='text/css'>

Thus if you want to bring in a completely different stylesheet (with a different file name) or even wish to bring in one of a set of different stylesheets depending on some user attribute, you can do so by modifying the executable code in the file called Stylesheet.inc in just this one place rather than having to modify the code within each program module.

In Customer+Center, the same mechanism is employed, but the relevant code is contained in the module called CCHeader.inc rather than Stylesheet.inc.

Note – In previous versions of Web+Center, the system administrator could choose the "background color" of screens through the Administration interface (Button in left-panel of Tech+Center). In version 5 this facility still exists but is only applicable to those modules/screens which have not been converted to use CSS. In most screens the background color is now specified in the relevant stylesheet for each application – except for Pocket Center which still uses the older interface.

If you are not familiar with the use of Cascading Stylesheets, good tutorials may be found on the web at:

http://www.htmldog.com/

http://www.echoecho.com/cssintroduction.htm

Chapter 14 Hosting Multiple Web+Center Systems on a single server

It is possible to host multiple versions of Web+Center on a single server with some minor customizations. The Web+Center product is specially designed to accommodate multiple instances of the Web+Center application hosted on a single server.
Before a second Web+Center system is installed on a single server, one should confirm the following licensing requirements for Licensed System as described in the End User Licensing Agreement (EULA) provided during program installation.

For each Web+Center licensed system, one is allowed to have (1) one production system with a single database instance and (1) one test system with a single database instance with the provided license key for the authorized number of techs. If you need another production system that requires another database instance and has more than (3) techs, then one must purchase another license key from Internet Software Sciences.

If you want to host multiple Web+Center systems on a single server follow the steps below:

Step 1) First install one system on the machine and setup the necessary virtual directories and ODBC connections and verify it is operational.

Step 2) Copy and paste the whole Web+Center folder tree to another directory or perform a second installation into a second different directory tree.
Step 3) Setup new virtual directories for Tech+Center, Customer+Center, Business+Center, documentation and Language with different virtual directory names for this new Web+Center directory tree. Internet Information Services will not let you create duplicate virtual directory names so the virtual directory names can not be Tech50, Customer50, Business50 and Pocket50 and so on.

Step 4) Setup another ODBC DSN pointing to the second system Webcenter database. It must be called something other than webcenter50_db.

Step 5) Edit the (4) Global.asa files which are located in the techcenter, customercenter , businesscenter pocketcenter, and reservationcenter directories. Edit the myDSN ODBC DSN connection string definition to point to the newly defined ODBC DSN name created in Step 4 above and also set the **language60** virtual directory definition located near the bottom of the global.asa file.

Step 6) Log into the Tech+Center of the second system and click on Administration, System Configuration Menu…More Configuration. Enter the appropriate new virtual directory names under the Virtual Directory Names column. Press Submit to save these changes.

Appendix A - ASP Resources

On-Line Websites about ASP programming:
> http://www.w3scripts.com/asp/
> http://www.learnASP.com
> http://www.asplists.com
> http://www.aspwire.com
> http://www.coveryourasp.com
> http://www.aspguild.org
>
> Lists of many ASP site
> http://www.learnasp.com/links/

Books:
> Active Server Pages 2.0 or 3.0 by Wrox Press
> ASP in a Nutshell by O'Reilly Press
> VB Script in a Nutshell by O'Reilly Press

VBA for Dummies Quick Reference (VBA guide but close to VB Script)

ASCII Text Editors:
Textpad editor from www.textpad.com - This editor has line numbers and numerous features that make it efficient for reviewing and editing the Web+Center ASP modules.

Web+Center Compatible ISP shared hosting Linux Sites:

http://www.webmasters.com