Hocus, Pocus!
Even MORE
About FOCUS!!
Introductions

Speaker Info:

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Senior Vice President
Application Software Division
Objectives

• **Acquire** a basic understanding of MEDITECH’s newest generation of HIS software, 6.x, built on a proprietary technology platform called FOCUS.

• **Become empowered** with the knowledge necessary to make wise and well-informed decisions about your own possible migration to the FOCUS platform.
TECHNOLOGY
• “Non-FOCUS” Client/Server technology

• Includes ALL 5.x versions (5.0 – 5.6)

• It is a technology, not a report writer!
What is FOCUS?

- Development environment built for FS language
- FOCUS is to FS what NPR MAGIC was to $T MAGIC
- New “Chronological” Database Technology
- Optimized Network Management
- New User Interface Tools for Screens / Reports
Platform History

HISTORICAL TECHNOLOGY MIX BY PLATFORM

MAGIC (4.x – 5.x)
- $T (MTRWkstn)
- Magic NPR (MTRWkstn)

CLIENT/SERVER (5.x)
- C/S NPR (CS Client)
- FS (FS Client)

CLIENT/SERVER (6.x)
- C/S NPR (CS Client)
- FOCUS (FOCUS Client)
What Is Client/Server 6.0?

- Hybrid of NPR and FOCUS Applications

- In 6.0 Adv. Clinicals are written in FOCUS (EMR, PCS, EDM, OM, along with HIM and MIS)

- Introduction of MEDITECH’s next generation

- FOCUS and NPR linked by “connections”

- Nearly Identical UI across FOCUS and NPR
What Is FS?

• FS = new(er) programming language

• Stands for “Functional System”

• Interpreted language with lots of function calls

• Emphasis on client-side processing

• Very little support of Data Defs & Variables
CODE COMPARISON
‘Hello World’ in MAGIC

Clear the screen & position at top

T(""")+#,
N("Hello World!")+#;

Write Hello World to the screen
Hello World in FS

:Code Main
`200,300'@lw@OW,
"My First App"@Ih
"Hello World!!"@Wb,
DO{@RK~=27}@CW;

Name of Function
Create a window
Add a title to the window
Output string in the foreground
Exit when user presses ‘ESC’
Close the window
Hello World in FOCUS

#Translation
:Options
Result  MSFile
:Product
Type  Unstructured

#Preamble
:Options
Type  Process

#Magic
:Code Main
`200,300}@lw@OW, "My First App"}@lh "Hello World!!"}@Wb, DO}@RK~={27}@CW; Same as FS code in the Main body
Hello World in FOCUS

#Translation

<table>
<thead>
<tr>
<th>Options</th>
<th>Product Type</th>
<th>Result</th>
<th>MSFile</th>
</tr>
</thead>
</table>

#Preamble

<table>
<thead>
<tr>
<th>Options</th>
<th>Type</th>
<th>Process</th>
</tr>
</thead>
</table>

#Magic

:Code Main

```quote
`200,300'@lw@OW,
"My First App"@lh
"Hello World!!"@Wb,
DO{@RK~=-27}@CW;
```

Used to determine “run-time” behavior
Hello World in FOCUS

#Translation
:Options
Result MSFile
:Product
Type Unstructured

#Preamble
:Options
Type Process

Defines the Object type
e. how this object will be “called”

#Magic
:Code Main
`200,300'@lw@OW,
"My First App"@lh
"Hello World!!"@Wb,
DO{@RK~27}@CW;
DDC  MAGIC Debugger - $DDC$ ??
Print on device? S
[ACCT.NO] = 0012398434934
[FIRST] = Frank
[INS.JK] = Follow The Yellow Brick Road
[LAST] = Fortner
[STR] = Magic Rocks
[SYS] = [IATIC *TEST*]:
[my.flag] = 1
[zB] = $DDC(" MAGIC Debugger - $DDC")$
[zY] = ->->->->->
[zZ] = $DDC(" MAGIC Debugger - $DDC")
FOCUS Debugger!

For more information:
Please contact your Iatric Account Manager or send an email to info@iatric.com
USER INTERFACE
New Screen Technology

- Menu Navigation
- Desktop Screen Regions
- Data Entry Screens
- FOCUS vs. NPR
- Lookups
- History / Audit Trail
Menu Navigation

Mix of FOCUS and NPR Routines

Bolded Selections; Creates “Visual Pathway”
Role-Based Desktop

"Analyst Desktop"

System Information
- File Servers
  - Network
  - Print Servers
- Background Job Clients
- Application Servers
  - Alert Service

Application Information
- Accounts Payable
- Admissions Module
- Authorization & Referral Management
- Billing/Accts Receivable
- Case Mix Abstracting Module
- Conversion Utilities
- Cost Accounting
- Data Repository (Focus)
- Electronic Medical Record (Focus)
- Emergency Department Management
- Executive Support System
- Fixed Assets
- General Ledger
- Health Information Management
- Laboratory Module
- MEDITECH Healthcare Information
- Materials Management Module
- Medical Records Indexing Module
- Medical Records Management
- Order Management (Focus)
- Payroll/Personnel System
- Pharmacy Module
- Quality/Risk Management
- Radiology And Departmental Management
- Registration (Focus)
- Scheduling
- The HUB
- Upgrade Tools
- Universe (Focus)

Last Update: 05/18/08 - 2114
Data Entry Screens

- Multi-Page Controls
- Navigation (Scroll) Bars
- Chosen Menu Option
- Historical Audit Trail
- New Cancel & Save Buttons
Choose Record (Segment)

Choose Entry

Lists changes over time
Lookups

Type full or partial mnemonic and press <Enter> - Choices populate in window below

Lookup Options
HARDWARE
Typical Configuration (151 – 300 beds)

- 3 NPR and 4 Focus File Servers
- SAN attached storage
- 2 Transaction Servers
- 9 Background Job Processors
- Other needed machines (for example, conversion server)
Hardware

Focus File Servers
- TXN1
- CONV SVR
- REG, EMR, ARM
- TXN2
- PCS, OM, EDM
- HIM, MIS, UNV, DR

NPR File Servers
- ADM
- LAB/PHA
- ABS/SCH
- BAR
- GL/MM/AP/FA
- UNV/ITS

SAN ATTACHED STORAGE

OTHER SUPPORTING HARDWARE
- PROXY SERVER & APP. SERVERS
- PRINT SERVER
- BACKGROUND JOB PROCESSORS
- MEDITECH SUPPORT CLIENT
- OTHER VENDOR FILE SERVERS
- WEB SERVICES
Transaction Server

- Controls all database writes
- Protects database from client/user failure
- Backups are transactionally aware across servers
- Roll-forward a database from a prior backup
Conversion Server

- Limit Downtime
- Allow for database file conversions to be performed offline
- Transactions can be rolled in and also converted offline
Chronological Database

- Append Only – No Edits or Deletes
- Increased Reliability
- Natural complete historical audit
<table>
<thead>
<tr>
<th>Message Group</th>
<th>Initial Entry 5/22/07</th>
<th>Edit on 7/23/07</th>
<th>Edit on 9/13/07</th>
</tr>
</thead>
<tbody>
<tr>
<td>A  ASPIRIN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C  COUMADIN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H  HEPARIN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HB HEAPRIN-BOLUS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HC HEPARIN/COUMADIN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N  NONE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHI</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M LABPTT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N PT/PTT RESPONSES</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mn LABPTTXY/PT/PTT RESPONSES103</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P LABPTT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PTT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RESPONSES</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Initial Entry 5/22/07**

**Edit on 7/23/07**

**Edit on 9/13/07**
Quick Facts

- “Connection” is synonymous with interface
- MT-2-MT Interfaces have always existed
- The difference here is platform-2-platform
From NPR to FOCUS
From FOCUS to NPR
CDS & ATTRIBUTES
Quick Facts

• Customer-defined screens exist in FOCUS

• Basic Attributes exist in FOCUS

• Rules in FOCUS allow for complex logic
CDS & Attributes

Analyst Desktop (NPR)
Alerts
Background Jobs
Connections
Report Queues
Activity Logs
Archived Documents
Reports
Word Processing
Dictionaries
My Settings
Emulate Person

MIS Parameters
System Preferences (NPR)
Administrative Dictionaries
Alert Dictionaries
Clinical Dictionaries
Coding Dictionaries
Communications Dictionaries
Cust-Defined Data Dictionaries
Document Dictionaries
Financial Dictionaries
General Ledger Dictionaries

Group Response
Query
Record (Focus)
Screen (Focus)
Screen (NPR)
### Basic Screen Attributes

<table>
<thead>
<tr>
<th>Default String</th>
<th>String</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default Rule</td>
<td></td>
</tr>
<tr>
<td>Editable</td>
<td>Yes</td>
</tr>
<tr>
<td>Editable Rule</td>
<td></td>
</tr>
<tr>
<td>Required</td>
<td>No</td>
</tr>
<tr>
<td>Required Rule</td>
<td>No</td>
</tr>
<tr>
<td>Suppress</td>
<td>No</td>
</tr>
<tr>
<td>Suppress Rule</td>
<td></td>
</tr>
<tr>
<td>Line</td>
<td>Rule English Display</td>
</tr>
<tr>
<td>------</td>
<td>---------------------</td>
</tr>
<tr>
<td>1</td>
<td>From BloodPressure, Find the starting position of &quot;/&quot;, SaveAs V1</td>
</tr>
<tr>
<td>2</td>
<td>Get the length of BloodPressure Save as Length</td>
</tr>
<tr>
<td>3</td>
<td>Length - V1 - 1 Save as V2</td>
</tr>
<tr>
<td>4</td>
<td>BloodPressure, Take the First V1 characters, Save as Systolic</td>
</tr>
<tr>
<td>5</td>
<td>BloodPressure, Take the Last V2 characters, Save as Diastolic</td>
</tr>
<tr>
<td>6</td>
<td>(Systolic - Diastolic) / 3 + Diastolic Save as V3</td>
</tr>
<tr>
<td></td>
<td>If V3 Is equal to 0 Then</td>
</tr>
<tr>
<td>7</td>
<td>Compute NIl Save as V3</td>
</tr>
<tr>
<td>8</td>
<td>Set program result to: V3</td>
</tr>
</tbody>
</table>
3rd Party Integration?
The Facts

• 6.x Data Can Be Extracted – Just Like MAGIC!

• 6.x Screens Can Be Scraped – Just Like MAGIC!

• 6.x Routines Can Be Launched – Just Like MAGIC!
DATA EXTRACTION
FOCUS to NPR

Focus "List" Structure

NPR Structure
Launching NPR Report From Custom Menu

List PCS Intervention Dictionary from Focus
<table>
<thead>
<tr>
<th>Mnemonic</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>0500000</td>
<td>Vital Signs</td>
</tr>
<tr>
<td>0500030</td>
<td>Intake and Output</td>
</tr>
<tr>
<td>0500100</td>
<td>Hemodynamic Monitoring</td>
</tr>
<tr>
<td>0909090</td>
<td>Collect Specimen</td>
</tr>
<tr>
<td>1000060</td>
<td>Alarms on at all times</td>
</tr>
<tr>
<td>1250032</td>
<td>Urine Dipstick</td>
</tr>
<tr>
<td>2000005</td>
<td>Assess Hydration Status</td>
</tr>
<tr>
<td>2250001</td>
<td>Cardiac Assessment</td>
</tr>
<tr>
<td>2250002</td>
<td>Monitor/Rhythm Assessment</td>
</tr>
<tr>
<td>2250003</td>
<td>Edema Assessment</td>
</tr>
<tr>
<td>2250004</td>
<td>Neurovascular/Sensory/Motor Assessment</td>
</tr>
<tr>
<td>2300000</td>
<td>Head, Neck, Ears, Eyes &amp; Throat Assessment</td>
</tr>
<tr>
<td>2500060</td>
<td>Assess Level of Consciousness</td>
</tr>
<tr>
<td>2500001</td>
<td>Neurological Assessment</td>
</tr>
<tr>
<td>2500004</td>
<td>Dysreflexia Assessment</td>
</tr>
<tr>
<td>2500007</td>
<td>Assess Deep Tendon Reflexes</td>
</tr>
<tr>
<td>2500090</td>
<td>Seizure Assessment/Precautions</td>
</tr>
<tr>
<td>2750001</td>
<td>Pain Assessment</td>
</tr>
<tr>
<td>2750002</td>
<td>Chest Pain Assessment</td>
</tr>
<tr>
<td>2750003</td>
<td>Epidural Assessment</td>
</tr>
<tr>
<td>Mnemonic</td>
<td>Active</td>
</tr>
<tr>
<td>----------</td>
<td>--------</td>
</tr>
<tr>
<td>0500000</td>
<td>Y</td>
</tr>
<tr>
<td>0500010</td>
<td>N</td>
</tr>
<tr>
<td>0500030</td>
<td>Y</td>
</tr>
</tbody>
</table>
Diet Name & Count were "scraped" off the screen
REPORT WRITING
- There are two report writers (NPR & FOCUS)

- In FOCUS, terminology has changed
  - DPMs are now called Objects
  - Segments are now called Records
  - Data elements are now called Fields

- No fragments, macros or current ability to use FS code inside computed fields
• Rule Editor / Wizard *may* eliminate need for code

• Performance comparisons have been interesting

• All FOCUS application data is available with no special “tricks” needed (e.g. fragments)

• No current method to allow FOCUS to get NPR data (coming)

• No NPR to FOCUS report conversion
IMPROVEMENTS
• Built-in audit trails of everything

• Improved network performance

• Reduced downtime; increased reliability

• Data corruption virtually eliminated

• Modern screen technology & workflow
Improvements

- Easier for MEDITECH to support
- A LOT less “locking” issues in FOCUS
- The concept of multiple databases is gone
THINKING ABOUT 6.x?
Things to consider…

- Two versions of Client/Server

- Phased Approach / Multiple Conversions

- Put in extra effort on report conversion plan!!

- Understand how much data will be converted

- Count the cost & decide on best timeframe
Hocus, Pocus!
Even More About FOCUS!

For more information:

Please contact your Iatric Account Manager
or send an email to info@iatric.com

Thank you for attending!