Who we are

Advanced Cybernetics Group, Inc. (ACG), incorporated in 1992, develops software for high performance embedded Systems. We are based in Silicon Valley, with software development teams in Bangalore and Pune, India. We are an approved Department of Defense supplier.

Customers

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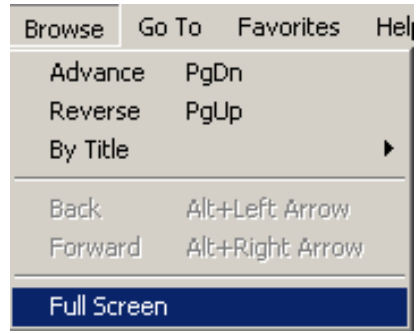
Email: *info@advancedcybernetics.com*

Viewing Instructions

- In the browser, click on **Full Screen.**
- Mouse click to advance to next slide(s)



- In Adobe Acrobat, click on **Full Screen.**
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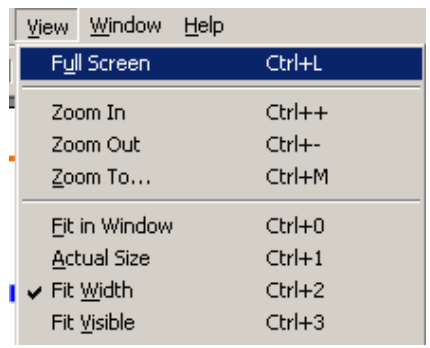


THE PROBLEM

- Asian retail distribution chains service many small retail outlets.
- Large mobile field force is "disconnected" electronically from rest of organization
- Field level information flow is thus a bottleneck in an other wise efficient system

THE MARKET SIZE

All Fast Moving Consumer Goods (FMCG) manufacturers operating in Asia:
Pepsi, Coca Cola, Proctor and Gamble, General Electric…

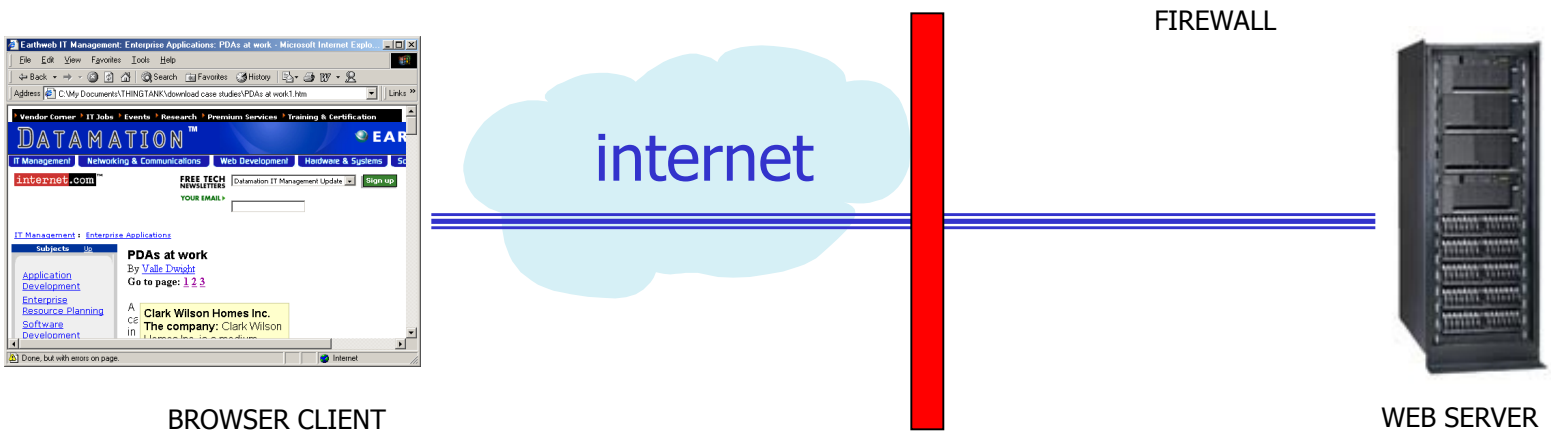
THE CHALLENGE

- Inability to provide "always on" internet connectivity approaches applied abroad.
- Imported technology (e.g. Wireless Palms) not practical, cost effective or scaleable.

THE APPROACH

- Develop a scaleable, secure platform designed around intermittent connectivity.
- Provide low cost internet devices supporting intermittent connectivity model.
- Simple adoption with no change to existing infrastructure.

"ONLINE" CLIENT- SERVER



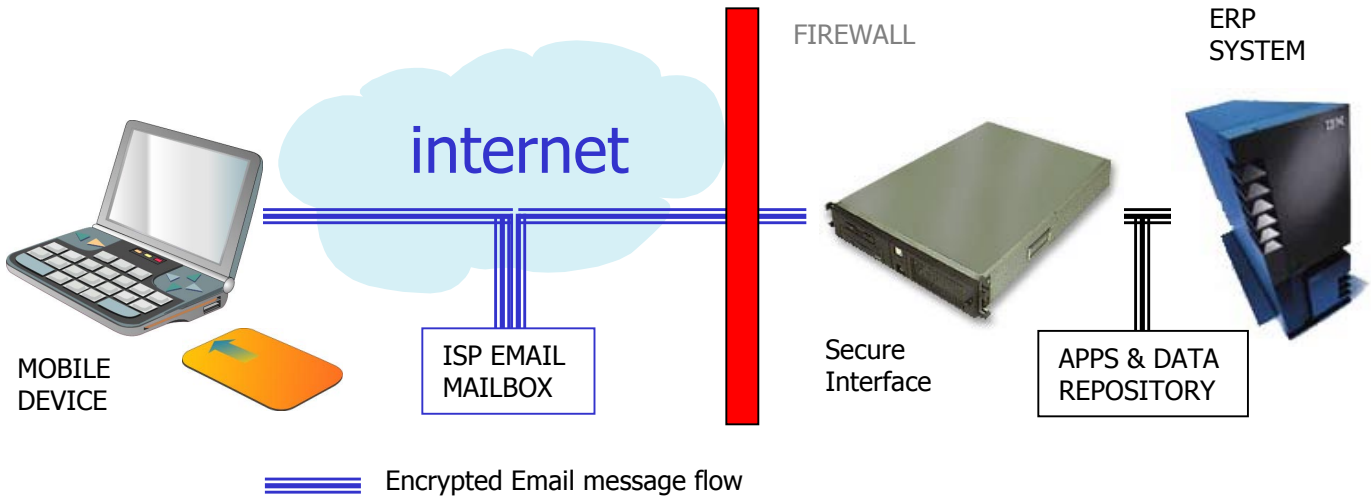
- SERVER CENTRIC AS OPPOSED TO CLIENT SIDE COMPUTING
- INTERFACE DRIVEN AT CLIENT SIDE, APPLICATONS RUN AT SERVER SIDE

ADVANTAGES OF CLIENT SERVER SOLUTIONS

- Lowest cost of ownership of a distributed, connected system
- All data flow to a central, secure data repository
- No application deployment at the client side needed

ASSUMPTION: CLIENT SERVER SOLUTIONS REQUIRE ONLINE CONNECTIVITY

"INTERMITTENT" CLIENT-SERVER



PROVIDE NEEDS BASED SOLUTIONS

- 24-7 online connectivity is not needed in the field.
- Intermittent connectivity - typically once a day - is sufficient
- Email provides intermittent connectivity
- Build a solution around email to address client-server applications

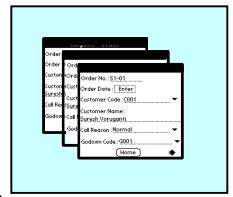
PARADIGM SHIFT: BUILD SOLUTIONS AROUND **INTERMITTENT** CONNECTIVITY.

FORMS RESIDENT IN APPLICATION REPOSITORY

Thin Client

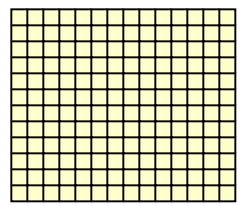
"Server"

Forms



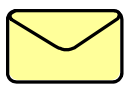
ISP Mailbox

Secure Interface



Field Data

Legend of Message types



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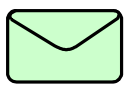

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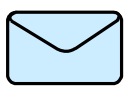


Encrypted Receipt Acknowledgement

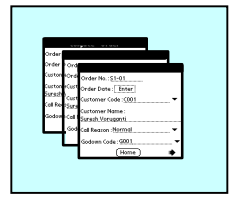
FORMS, ENCRYPTED, SENT TO DEVICE IN THE FIELD

Thin Client

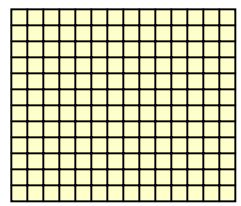
ISP Mailbox

"Server"

Forms



Secure Interface



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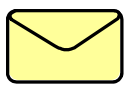

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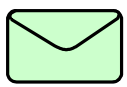

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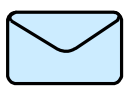


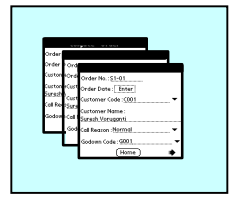
Encrypted Receipt Acknowledgement

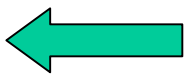
ENCRYPTED EMAIL RECEIVED BY THIN DEVICE

Thin Client

"Server"

Forms

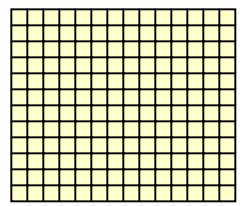




ISP Mailbox

Secure Interface

- Incoming mail
- Outgoing mail
- Applications Folder



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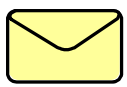
Legend of Message types



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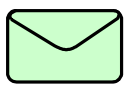

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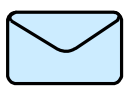


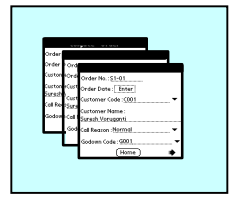
Encrypted Receipt Acknowledgement

EMAIL DECRYPTED AND PLACED IN INCOMING MAIL FOLDER

Thin Client

"Server"

Forms



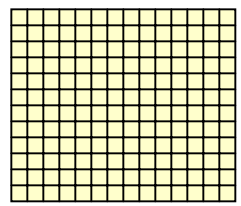
Incoming mail

Outgoing mail

Applications Folder

ISP Mailbox

Secure Interface



Field Data

Legend of Message types

Encrypted Form Sets

Encrypted Return Data

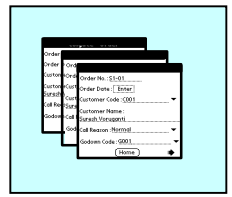
Encrypted Receipt Acknowledgement

INCOMING MAIL "READ", FORMS TRANSFERRED

Thin Client

"Server"

Forms



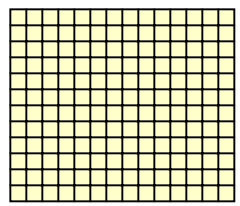
Incoming mail

Outgoing mail

Applications Folder

ISP Mailbox

Secure Interface



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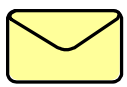
Legend of Message types



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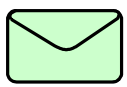

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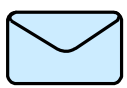


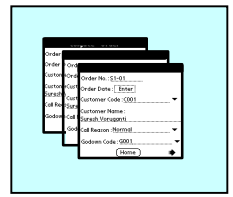
Encrypted Receipt Acknowledgement

USER FILLS FORM IN THE FIELD

Thin Client

"Server"

Forms



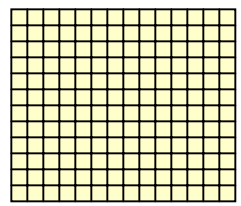
Incoming mail

Outgoing mail

Applications Folder

ISP Mailbox

Secure Interface



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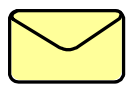
Legend of Message types



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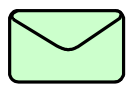

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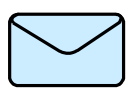


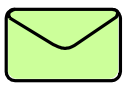
Encrypted Receipt Acknowledgement

RESPONSE ENCRYPTED, PLACED IN OUTGOING MAILBOX

Thin Client

Incoming mail

Outgoing mail



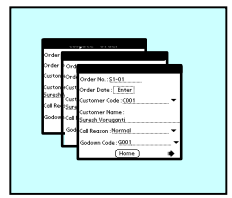
Applications Folder

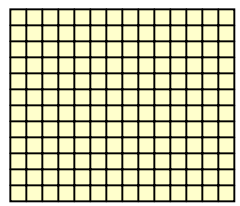
ISP Mailbox

Secure Interface

"Server"

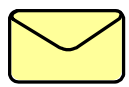
Forms





Field Data

Legend of Message types



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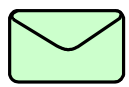

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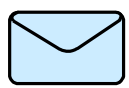


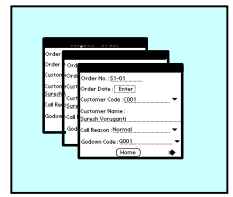
Encrypted Receipt Acknowledgement

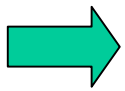
OUTGOING EMAIL SENT, LOCAL COPY KEPT

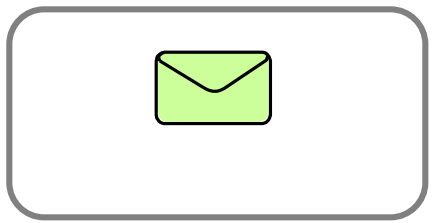
Thin Client

"Server"

Forms





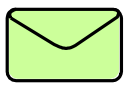


ISP Mailbox

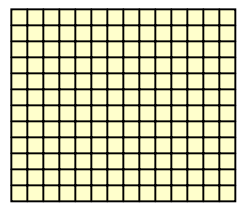
Secure Interface

Incoming mail

Outgoing mail



Applications Folder



Field Data

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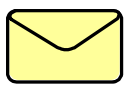

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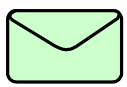

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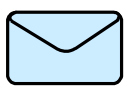


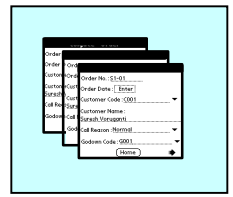
Encrypted Receipt Acknowledgement

OUTPUT RECEIVED AND DECRYPTED

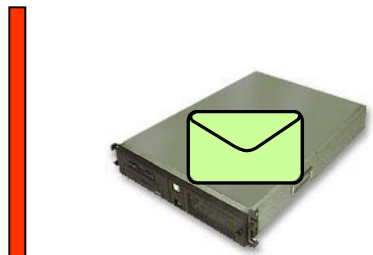
Thin Client

"Server"

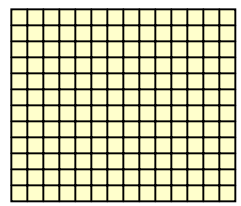
Forms



ISP Mailbox

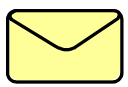


Secure Interface



Field Data

Legend of Message types



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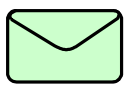

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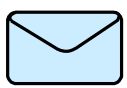


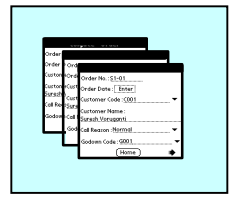
Encrypted Receipt Acknowledgement

DATA REPOSITORY UPDATED

Thin Client

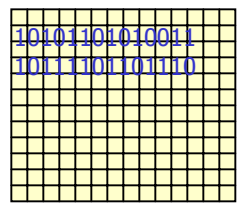
"Server"

Forms



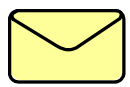
ISP Mailbox

Secure Interface

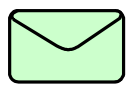


Field Data

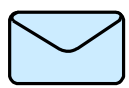
Legend of Message types



Encrypted Form Sets



Encrypted Return Data



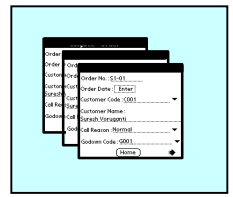
Encrypted Receipt Acknowledgement

ACKNOWLEDGEMENT RECEIPT SENT

Thin Client

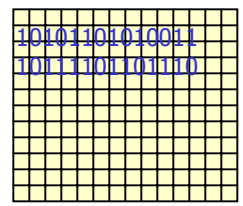
"Server"

Forms



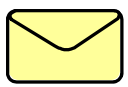
ISP Mailbox

Secure Interface

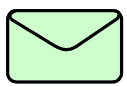


Field Data

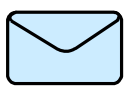
Legend of Message types



Encrypted Form Sets



Encrypted Return Data



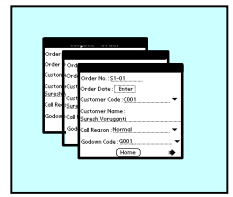
Encrypted Receipt Acknowledgement

OUTBOX COPY OF MAIL REMOVED

Thin Client

"Server"

Forms



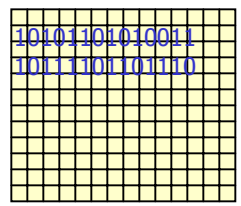
Incoming mail

Outgoing mail

Applications Folder

ISP Mailbox

Secure Interface



Field Data

Legend of Message types

Encrypted Form Sets

Encrypted Return Data

Encrypted Receipt Acknowledgement

TRANSACTION COMPLETE

Thin Client

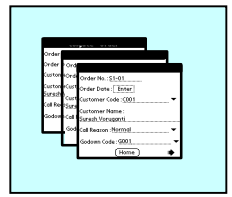
- Incoming mail
- Outgoing mail
- Applications Folder

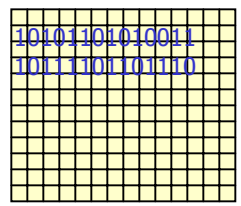
ISP Mailbox

Secure Interface

"Server"

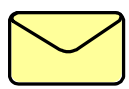
Forms



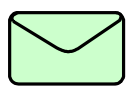


Field Data

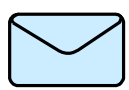
Legend of Message types



Encrypted Form Sets



Encrypted Return Data



Encrypted Receipt Acknowledgement

Mobile Thin Device

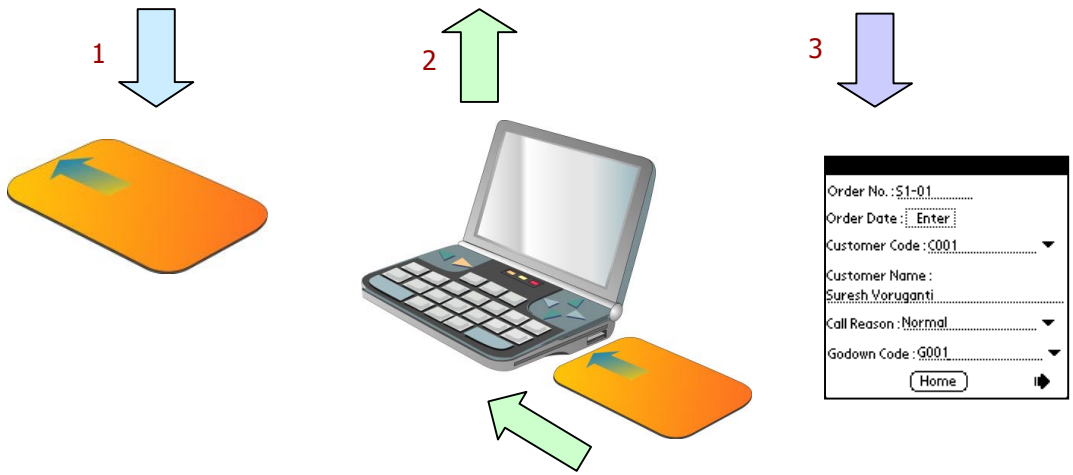
Internet Connectivity	Integrated Modem
Secure Transmissions	Smart Card contains Encryption Keys
	Security layer built into Kernel of Operating System
Application Support	Secure Application Deployment via Email
Application Management	Minimal, Server side controlled
Connectivity Ports	Serial and Infra Red (IR)

Secure Interface

Internet Connectivity	Accesses existing online connectivity at enterprise.
Exposed Interfaces	None. Not a web server. Email polling employed
Security	Hardware based fast encryption for bulk transmissions
Hardware	Standard Industrial Computer with Internet connectivity
Operating System	Linux
Configuration	Through Terminal. No external exposure
Data Interfaces	XML based inputs/outputs to enterprise databases

Secure Key Administration
- Public Key Database
- Private Key Generation
- Smart Card Generation
- Administration Interface

Web Folder Administration
- Account Subscriptions Database (rwx)
- Public and Private Folders
- Applications- Applets, Form Sets
- Transaction History (per Smart Card)



1. Smart Card created
- Public/Private Keys created
- Access Privileges created
- Subscription list created

2. Smart Card Inserted
- Card inserted in Device
- Device Logs on to Internet
- Card status made active

3. Applications Installed
- Public Keys list loaded
- Applications downloaded
- Form templates installed

- Access to the secure interface is controlled by smart cards supplied by the enterprise.
- Multiple users of the same device, can have different access privileges to programs and data.

SERVER SIDE COMPUTING

THIN DEVICES

GENERAL PURPOSE

APPLICATION SPECIFIC

PALM

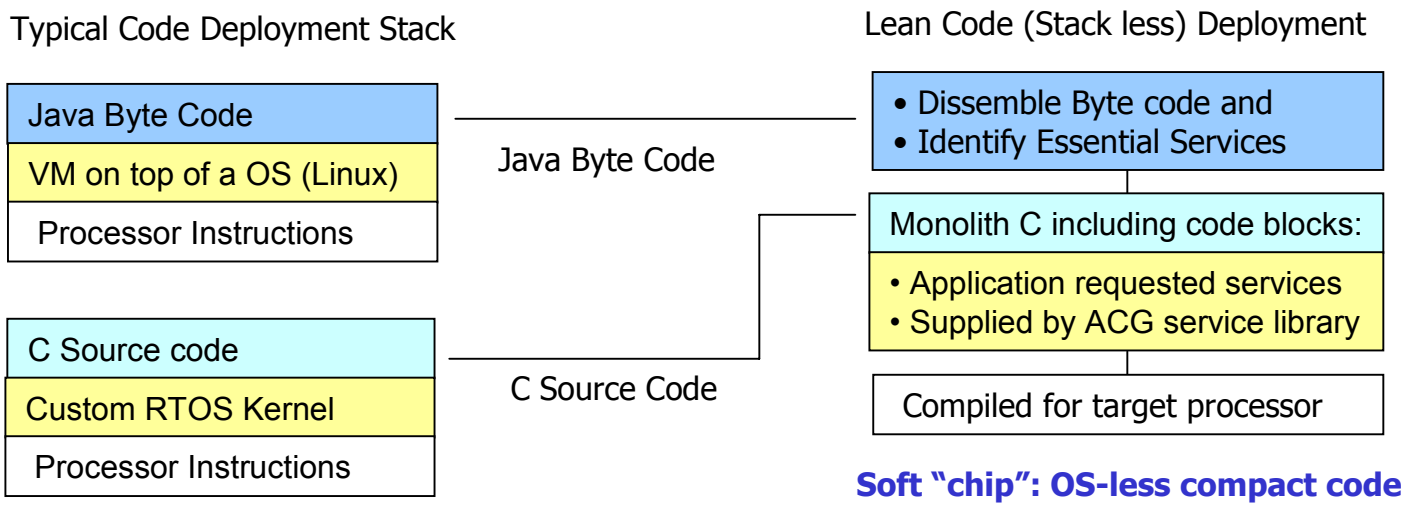
PC

THICK DEVICES

LOCAL COMPUTING

ACG focus: small footprint application specific internet enabled thin devices.

Objective: Small foot print for low cost embedded system applications
Key Idea: Remove overhead of OS/Virtual Machine from the equation



- Write Java or C code rapidly and test in simulation.
- Migrate swiftly to low footprint, low cost devices.
- No licensing costs for OS/JVM, lower cost for device hardware
- OS-free approach more secure – no OS to break into
- Lowered cost of development and deployment for ACG customers.

For more on our thin footprint technology:

www.advancedcybernetics.com/technology.htm

For more on wireless enabled small devices:

www.advancedcybernetics.com/products.htm

Or write *info@advancedcybernetics.com*