

Morgan Stanley

Eclipse Banking Day in London 2009

Eclipse Enterprise Provisioning

February 2009

Miles Daffin – Java Development Environment Lead, Morgan Stanley

Providing Eclipse to Developers at Morgan Stanley

Eclipse is used by 1000+ developers at Morgan Stanley and is made available to them by a central group. This presentation will discuss how Morgan Stanley provides Eclipse, the requirements they have for enterprise Eclipse provisioning and how they overcame some of the challenges met whilst working with the 3.2, 3.3 and 3.4 releases.

- Overview of Morgan Stanley
- Enterprise Constraints
- Enterprise Provisioning Requirements?
- How Eclipse is provided at Morgan Stanley - challenges and Solutions
- Summary & Conclusions
- Questions?

Overview of Morgan Stanley

Facts

- Founded in 1935
- Leading client franchise and brand
- Diversified business mix with global reach.
- Strong capital position with a pro-forma Tier 1 capital ratio greater than 19%
- Financial Holding Company (FHC) status

Culture

“A one firm culture, driven by excellence, integrity and diversity” John Mack, CEO



Morgan Stanley's
Headquarters in Times Sq, NY

Morgan Stanley

Morgan Stanley's Global Presence



Offices in 37 Countries

Morgan Stanley Technology

Challenges

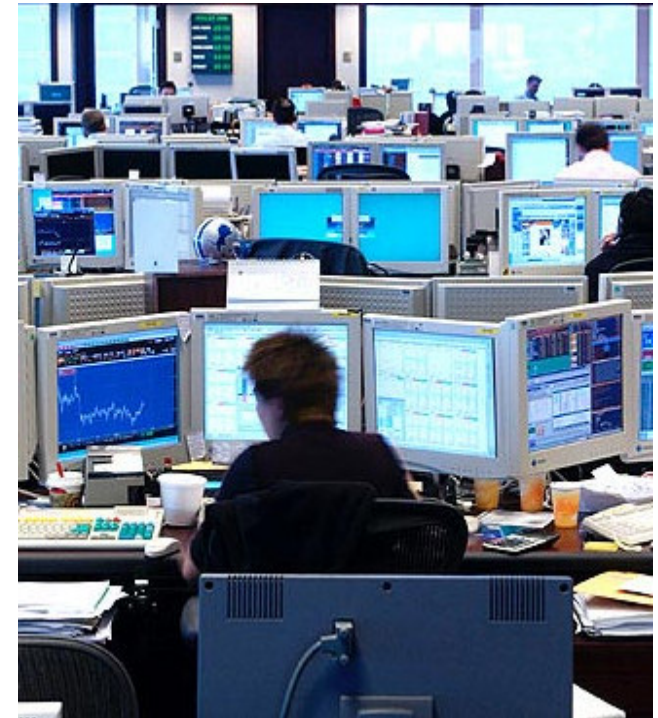
- Increasingly global and complex financial markets
- Constantly changing and demanding industry

Solutions

- Customised technology environment
- Strong collaboration with vendors
- Exceptionally talented technologists

Results

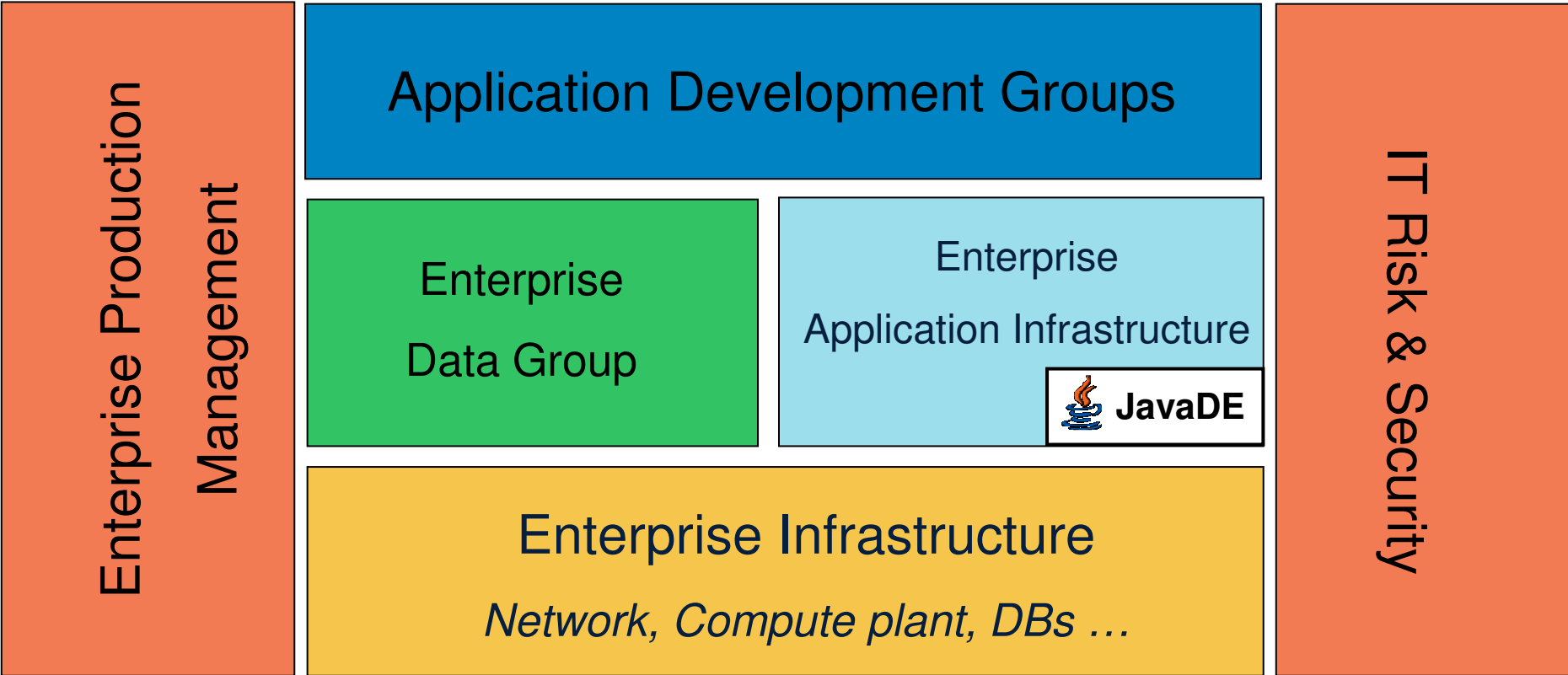
- Best IT Department in Europe, *Financial News*, Sept 05,06 & 07
- Best Back Office Solutions, *Financial News*, Sept 06



Greasing the wheels of Java development...

Clients

The Business



Enterprise Constraints & the consequences

Constraint: The Morgan Stanley Software Download and Installation policy

Consequences:

- Cannot allow developers free access to external Eclipse ‘environment’
 - Risky – malicious code?
 - Chaotic/hard to support
 - Poor use of bandwidth
- Need to create *private* Eclipse environment behind the corporate firewall and *contain* users within it.
- Need to keep private environment up to date quickly and *easily*
- Need to ensure private environment contains all required stuff + dependencies

Enterprise Provisioning Requirements

- Security
- Mirroring
- Installation & Configuration

Security - Requirements

- Only allow users to see internal update sites/repositories
- Only allow users to install plugins from internal update sites/repositories
- Only allow users to update plugins from internal update sites/repositories
- Ensure internal sites contain no malicious code

Mirroring - Requirements

- Need to be able to create 1:1 mirrors of external Eclipse and Ganymede repositories (update sites).
- Create a *:1 merged mirror based on selected IUs from multiple external repositories (update sites), which may or may not be P2 enabled.
- Need to be able to include features and plugins in the *:1 update site that are not disted in external repositories/update sites.
- Need to keep both *:1 and 1:1 mirrors up to date.
 - Update method needs to be capable of being automated (need to reduce our admin costs)
 - At the moment the P2 MirrorApp has no update mode. It seems to re-mirror everything each time it is run.

Installation & Configuration - Requirements

Need an eclipse installer that:

- Installs a version of eclipse based on a custom profile – a shopping list of different plugins sourced from internal repositories.
- Enables the install to be run in a custom environment - e.g. perforce executables on the PATH so that the perforce plugin will work
- Installs an arbitrary selection of other things along side the Eclipse install - e.g. JDKs
- Creates an install configured with a standard, global (i.e. applying by default to all workspaces) preferences:
 - e.g. java code format
 - e.g. installed JREs
- Installs desktop shortcut to install launcher
- Is easy to configure and maintain

Morgan Stanley

How is Eclipse is provided at Morgan Stanley?

Let's try to keep it simple!

- Set of internal update sites: mirrors and home grown plugins
 - Not One Big Repository
 - Makes it easier to update subsets of material
- Custom, multiplatform, ant-based installer
 - One flavour based on Eclipse classic
 - Users extend/update as necessary from internal repositories
- Internal community support forum
- Internal wiki/docs

Security - Challenges and Solutions

- **Eclipse 3.2/3.3 – easier to handle than 3.4**
 - **Problem:** Discovery URLs added to update UI from installed feature metadata. **Solution:** hack all feature meta using Ant
 - **Problem:** control list of update sites – only internal. **Solution:** Add bookmarks.xml (configuration/org.eclipse.update - custom installer script)
 - **Update policy:** control update source but user can override...
 - **Malicious code?** Use virus scanner on internal mirrors during build
- **Eclipse 3.4 - tricky**
 - **Problem:** P2 UI repository list gets polluted with external URLs. **Solution:** use Ant script to remove external references where ever they are found
 - **Problem:** control list of update sites. **Solution:** Add custom repository preferences to install using custom Ant installer script.
 - **Malicious code?** Virus scan update sites when built
- **General:** tell people not to configure a proxy or override update policy...

Mirroring - Challenges and Solutions

- **Eclipse 3.2/3.3**

- Rsync and wget no good - content may be scattered (+ other issues)
- Standalone updater: mirror mode kept failing; hard to use selectively; hard to author/maintain site.xml for miscellaneous plugin collection
- Used: Tikal Mirror Manager + Ant for post processing.

- **Eclipse 3.4**

- Use P2 mirror apps but 3.4 versions missing/broken. 3.5M3 versions work!
 - OK for 1:1 mirrors: Eclipse platform; Ganymede
 - Cannot mirror selectively - cannot pick and choose plugins
 - Is the mirror good? How can I test? (-ignoreerrors???)
- Use Tikal Mirror Manager
 - Can mirror selectively - pick and choose stuff from many external sites
 - Good for *:1 mirrors
 - Run P2 metadata generator over result (site.xml as basis for categories)

- **Testing:** manual – does it install and run?

Morgan Stanley

Installation & Configuration - Challenges and Solutions

Cross platform, Ant-based installer that delivers:

- Base platform – Eclipse Classic
 - Tried P2 director but failed...
- List of plugins – from internal repositories.
 - Use standalone updater & P2 director
- JDKs
- Global config: -plugincustomization (no alternative)
- Launch script & desktop shortcuts

Summary & Conclusions

- Lot of hard work providing Eclipse for an Enterprise
 - Eclipse not designed with Enterprise users in mind
- Had a system that worked for 3.2 & 3.3, then 3.4 came along...
- 3.4 much harder work than 3.2/3.3. Step backward from p.o.v. of our Security requirements:
 - No update policy equivalent...
 - External references in metadata...
 - Taken from July 08 to Jan 09 to stabilise 3.4 env - ongoing problems...
- P2 repo list pollution a big problem (e.g. on update 3.4.0 -> 3.4.1)
- 3.4 added value?
 - P2 UI - Filter/search – easier to find what we have
 - Anything else? Not really...

Morgan Stanley

Summary & Conclusions

- Go for an out of the box solution?
 - Vendor?
 - Yoxos Enterprise?
 - Pulse Private Label?
 - Other
 - Maynstall? Defunct?
- Reduce total cost of ownership and give users what they need:
 - #1: Reliability (stability)
 - #2: Functionality (plugins etc.)
- Why not contribute to Eclipse?
 - Time/Money
 - Understanding – complex (e.g. P2)

Questions

