SIGAda's Approach to the Management of Ada Bindings to Application Program Interfaces (APIs)

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Presented to
ISO/WG9
December 13, 2002

Outline of Discussion

- Purpose, Background, Overview, Definitions
- Approach for Registered Managed APIs
- Responsibilities
- Charter, Membership, ...

Purpose

- To provide a mechanism for the management of Ada Bindings to Application Program Interfaces (ABAPIs) for the Ada programming language
  - Standardized ABAPIs
  - Registered ABAPIs – focus of our discussion
  - Unregistered ABAPIs

Background

- Most Ada bindings to APIs are unmanaged
- Most Ada bindings are hard to find
- If found, little information is included with them
- No automatic announcement of updates (if any)
- Do not evolve as Ada evolves
- ISO/WG9 requested proposals from SIGAda and Ada-Europe
- ISO/WG9, Ada-Europe, and SIGAda will work together to manage Ada Bindings to APIs (ABAPIs)

Overview

- Registered ABAPIs will be publicly available
  - SIGAda APIWG web page
  - Compilable Ada bindings to APIs (ABAPIs)
  - Artifacts (sources, examples, tutorials, known problems, lessons learned, rationale, etc.)
  - Procedures to easily Register ABAPIs
  - APIWG responsible for registration and public availability (on web page or links)
  - APIWG subgroups to develop/maintain/evolve ABAPI of interest to that particular subgroup

Definition of ABAPIs

- Standardized ABAPIs – provided in the Ada LRM (e.g., Annexes) or through secondary ISO standards (e.g., ASIS)

- Registered ABAPIs – ABAPIs made publicly available via the APIWG web page; individual or organization is responsible for each Registered ABAPI

- Unregistered ABAPIs – neither, but a link may be provided on the APIWG web page

Definition of Registered ABAPIs

- Registered ABAPIs – keeping up with who/where ABAPI is developed and/or maintained by a third party – with their permission

- Registered Managed ABAPIs (RMABAPIs) – Subgroup responsible for (possible development and) maintenance of ABAPI; changes are managed via consensus; Subgroup performs baselining and versioning of their own ABAPI

- Registered ABAPIs are *NOT* standards

ABAPI Home Web Page

- Includes valuable artifacts
  - Compilable Ada source code for Ada Binding (Specs) and Ada Bodies (non-commercial)
  - Rationale
  - Examples, tutorials, useful tips
  - Known problems, lessons learned, etc.
  - Licenses/Permissions (modification rights)
- On SIGAda's web server
- May contain links to Unregistered ABAPIs
- May be mirrored elsewhere (e.g., Ada-Europe)

API Working Group (APIWG)

- ACM SIGAda chartered Working Group to manage Registered ABAPIs and Registered Managed ABAPIs
- Chair's responsibilities include
  - Defining Charter for APIWG
  - Coordinating work of all Subgroups
  - Updating APIWG web site for all Registered ABAPIs

APIWG Subgroups

- Subgroup exists for each Registered Managed ABAPI (RMABAPI)

- Subgroup chair is responsible for the development, maintenance, and evolution of their particular RMABAPI

- Subgroup is responsible for evolving RMABAPI (via consensus), including baselining their RMABAPI, versioning of new releases, and identifying associated artifacts

Approach for Registered ABAPIs

- Provide current set of developed Registered ABAPIs on web page

- ABAPI is provided unchanged from originally developed ABAPI, with associated artifacts

- If requestor is not the ABAPI developer, APIWG Chair seeks proper permissions to place ABAPI (now and forever?) in the public domain

- If permission is granted, all artifacts, including source code is placed on APIWG web page; APIWG Chair announces it; others may also add artifacts (tutorials, examples, etc.)

Approach for RMABAPIs

- Ada Binding evolves as the API evolves
- Subgroups responsible for evolution and maintenance of each RMABAPI
- Web page identified and email list created
- Necessary artifacts can be placed on web site (Ada sources, rationale, documentation, tutorials, examples, etc.)
- Email list used for Subgroup discussions, Subgroup business, notification to others

Responsibilities of SIGAda EC

- Creates APIWG and appoints Chair
- Approves APIWG Charter
- Approves creation of APIWG Subgroups and Chairs
- Provides necessary support to APIWG and Chair, all Subgroups and Chairs
- Yearly assessment of Subgroup viability and possible dissolution

Responsibilities of APIWG Chair

- Maintain current artifacts for all Registered ABAPIs

- Secure approval to place third party ABAPIs on APIWG web page

- Facilitate SIGAda EC approval of each Subgroup

- Ensure Subgroups are viable and maintain effective web pages for their RMABAPI

Responsibilities of RMABAPI Subgroup Chairs

- Develop, Maintain, Evolve the Ada Binding to their API (via consensus)

- Maintain their RMABAPI and its artifacts on their own RMABAPI's web page

- Approve baselines and versions of their own RMABAPI

- Recommend replacements of their own RMABAPIs when they are no longer viable

Members of the Ada Community

- Recommend to the APIWG Chair those Ada Bindings to APIs to be established as Registered ABAPIs

- Recommend to the APIWG Chair those ABAPIs to be established as Registered Managed ABAPIs (RMABAPIs)

- Provide feedback to the APIWG Chair and RMABAPI Subgroup Chairs to make more (valuable and useful) information available to the Ada community

APIWG Charter

- To be created from discussions held at the Workshop at SIGAda on Wednesday evening and at the WG9 meeting held Friday morning

- As a strong recommendation from the SIGAda Workshop, there should *NOT* be separate Charters for each Subgroup

Membership

- Membership in the APIWG or any of its Subgroups is open to any interested party
- Members are responsible for their own expenses
- APIWG Chair must be a member of both ACM and SIGAda
- Other members are encouraged to be members of SIGAda or Ada-Europe

APIWG Home Page

- A resource to the entire Ada community

- Publicly available (no password)

- To upload the necessary artifacts to the APIWG web pages, one must have an account on the ACM server (this usually means that one must be a member of ACM and SIGAda)

APIWG Email Lists

- Each Subgroup will have their own email discussion list
- Anybody can be a member of that Subgroup's email list
- Any member of the list can freely post
- Others' posts must be approved by the list owner
- List owner must be a member of ACM and SIGAda

Announcement of RMABAPI Releases

- Each RMABAPI Subgroup is responsible for setting the current version of their own RMABAPI

- Notification of the latest version should be
  - Posted on the web
  - Announced in Ada Letters
  - Announced through the Subgroup's email list
  - New versions should be in the monthly announcements of the SIGAda-Announce list and comp.lang.ada, Team-Ada, and Ada-Europe

Why SIGAda and Ada-Europe?

- Lightweight process carried out by volunteers to share Ada bindings to APIs among the Ada community

- Provides a forum and mechanism to evolve ABAPIs as needed so that changes can be made without involving ISO/WG9

- If/When ready, ABAPIs may be formally standardized by ISO/WG9

Candidates for possible APIs?

- Possible Subgroups for RMABAPIs
  - Files/Directories – done
  - Sockets – exists within GNAT
  - HTTP/CGI
  - Time zones
  - Environment variables
  - ODBC/JDBC or equivalent
  - XML
  - others...
- Base upon POSIX and/or Win32 and/or others?
- Define these within a year for WG9 consideration (September 2003)

Results of Workshop Discussion

- 17 people attended Workshop
- APIWG created
- APIWG Web pages
- APIWG Chair responsibilities
- Subgroups responsibilities
- First Subgroup created – XML
- First test example – CGI
- Approach to move forward

Workshop Results:
APIWG Created

- Charter to be drafted
- Clyde Roby is Acting Chair
- "Stamp of Approval"
  - Supported and/or Maintained
  - Available
  - Does not change "frequently"
- Clear instructions to submit your favorite Ada Spec or ABAPI, including "dirty" ones

Workshop Results:
APIWG Web Pages

- ABAPI should never disappear

- Latest version always available

- APIWG License to be with RMABAPIs (e.g., GPL, GMGPL, BSD, etc.) – *ONE* license

- Sources – not links – as much as possible (no compression of sources)

- Link to appropriate web page for Ada 200Y

Workshop Results: APIWG Chair Responsibilities

- Announce to SIGAda-Announce, comp.lang.ada, etc. when Subgroup artifact(s) ready

- Place Subgroup artifacts on public part of APIWG web page

- Namespace reservation, e.g., Ada.API.

- Guidelines for all Subgroups to follow (including minimal coding standards)

- Veto right over Subgroups ???

Workshop Results:
Responsibilities of Subgroups

- Obtain/develop a specification to an API
- Maybe provide/develop a (freely available) implementation
- If more than one Ada Spec exists, then
  - Choose one
  - Negotiate among all to create a single one
  - Define multiple Ada bindings
- Determine if Ada language should be changed – notify WG9

Workshop Results: Miscellaneous

- XML Subgroup created
  - Robert Leif is Acting Chair
- First test example – Ada bindings to CGI
  - AdaCGI by David A. Wheeler
  - Another one by Pascal Obry

Workshop Results: Approach

- Brief WG9 for comment
- Create the Draft "Concept of Operations", incorporating WG9 comments from discussion
- Test the "concept" document with Ada CGI binding
- Refine the "concept" document
- Publicize on SIGAda, comp.lang.ada, Ada-Europe, WG9 discussion lists
- Update the "concept" document
- Present to SIGAda EC for approval
- APIWG chair accepts ABAPIs for registration
- Subgroups formed to develop/maintain RMABAPIs

Questions / Discussion

- Better name for the Working Group?
- Pointers to candidates for Registered APIs?
- Pointers to candidates for Registered Managed APIs?
- …