

GRAAP-WG Sessions

OGF 20, Manchester, UK
May 7, 2007

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Sessions planned



- GRAAP #1, May 7, 09:00 am - 10:30 am
 - State of the spec, last changes, implementations
- GRAAP #2, May 7, 11:00 am - 12:30 am
 - Implementation/Interoperability issue discussion
- GRAAP #3, May 7, 02:00 pm - 3:30 pm
 - Negotiation

Agenda GRAAP #1



- State of the spec
- Last changes before submission (Toshi Nakata, 20 min)
- Implementation
 - VIOLA Implementation (Oliver Wäldrich, 20 min)
 - AssessGrid: SLA structure & GT4 implementation issue (Dominic Battre, 20 min)
- Discussion of features not considered in WS-Agreement V1.0

State of the spec



- Final version of the spec submitted to the GFSG
- GFSG accepted the spec on May, 6

Features useful for later versions of the spec



- SLOs depend on ServiceProperties which depend on SDTs
 - JSDL useful for # CPUs, bandwidth, etc., not for response time, CPU usage etc.
 - Ariel: GSA-RG work could be used, should be investigated, continue discussion at GSA-RG session (Wednesday, May 9, 06:00 pm , Exchange 2/3)
 - Extension for JSDL for qualitative metrics
- Define application domains for SLAs, use cases
 - Omer use case from markets
 - Oliver/Dominic: scheduling & RMS use-case, brokering
 - To be ready before OGF 21
- Repository for SLA templates used in different projects
- Paul Strong (co-chair of reference model, eBay) defining terms for use in OGSA
-> to be contacted
- Creation constraints: evaluation of XPATH expressions when using SOAP messages
- Monitoring: how to verify SLAs? Not a topic to be resolved in GRAAP, but could provide hints.

Agenda GRAAP #2



- Implementation/Interoperability discussion
 - Hosting environment issues (recommendation?)
 - Interoperability activities started
- Scenarios/use cases for dynamic SLAs and negotiation

- WSRF (base faults, resource properties) and WS Addressing are critical: different versions & different support in hosting environments
 - Name spaces are different
- Level of interoperability to achieve?
 - Schema level, minimal set of terms for “hello world”
 - create document describing the interoperability scenarios that will be submitted to the OGF document process. Structure & outline should be ready after OGF20
 - Oliver, Wolfgang, Dominic, Omer -> time tbd in the break after GRAAP #3
- GT4 expected to migrate to the newest version of WSRF & WS Addressing, but no schedule available on the website -> contact Globus Alliance people during OGF20
- Template generation
 - Repository or dynamic on demand
 - How to create an ID for a template from a repository -> static ID

Implementation/interoperability discussion II



- Similarities in the AssessGrid and VIOLA implementation could be used for first tests on the functional aspects, SORMA to contribute
 - SDTs in common? Based on JSDL, should work, guarantee terms however are completely different
- BEinGrid: most probably based on (modified) WS-Agreement
- NextGRID: similar protocol but different language
- TrustCom
- GridTrust
- →Organize a telephone conference with these projects, after restructuring the Google document (see http://docs.google.com/Doc?id=dd2wwjk8_0d7b58b)

Use-cases for dynamic SLAs and negotiation



- Q1: How to create Agreements to minimize negotiation (e.g. using constraints, functions) needed to converge?
- Q2: How to re-negotiate an existing agreement, both client and provider driven? → Could become difficult when there are conflicting parties. Probably dependent on the “cost” of re-negotiation.
- Optimistic and pessimistic scenarios, recovering from failure or offering more service to the user
- SLAs for optimizing flops per watt (evolving use case: Intel study, SwissGrid)
- Q: Are dynamic SLAs useful? → In a Grid with some economic model below: Yes
- If not all requirements could be fulfilled during the initial creation of the SLA and the service provider later has additional resources/capabilities
- Network providers: Ipsphere plans to use OGSA protocols, WSRF, objective: automatic negotiation of SLAs
- OGSA session on SLTs for BytelO and BES 4pm
- To start work on negotiation begin with Q1) and extend to Q2) later
- Creation constraints to indicate fixed/negotiable terms
- Provide protocols for bilateral negotiation to select from
- Q: Survey on protocols? → Shamima will send a paper form 2002
- Toshi to provide a very simple micro spec for Q2)
- Omer to provide something on Q1) after OGF21

- Negotiation
 - Performance comparison between a 3 phases and a 2 phases negotiation protocol (Antoine Pichot, 20 min)
 - Akogrimo negotiation framework (NN, 20 min)
 - AssessGrid Negotiation Scenarios in AssessGrid and implications for negotiation procedures (Dominic Battre, 20 min)
 - Implementing negotiation protocols in Ontogrid (Shamima Paurobally, 20 min)

Negotiation approaches I



- Antoine: Performance comparison ... VIOLA (2PC) & Negotiation protocol
Olivers presented during OGF18 (3PC)
- Dominic: Negotiation scenarios in AssessGrid
 - Scenario 1: User-Provider negotiation: no commit by the client when sending the templates, because the service provider fixes the price only afterwards
 - Scenario 2: Broker is mediator
 - Scenario 3: Broker is contractor
- Implications
 - 1) commit message is needed
 - 2) no need to commit for the user
 - drawback: WS-AG returns only one offer template, which is not sufficient
 - offers need expiration time, but how to handle clocks and failure in a distributed system
 - templates should be similar/identical to be handled by the broker, may not depend on user
 - 3) needs to be communicated
 - Discussion of 2PC and the impossibility to have it work properly
 - agreed on uncertainty of model due to timing problem
 - Dean: same effect can be achieved with simpler protocol

Negotiation approaches II



- Shamima: Ontogrid's negotiation service
 - Based on English auction, auctioneer & bidders, deadline
 - Integration on WS-Agreement? Translating SpeechAct to WS-Agreement

- Scenario document has to be an informational one that undergoes public comment period
- Telco on the document Friday February 16, 15:30 - to be published to the GRAAP list
- State of the CREMONA implementation to be checked by Jean Pierre Prost
- Industrial use case from the reliability and robustness workshop
 - How industry uses penalty clauses
- Negotiation part of WS-Agreement?
 - Negotiation profiles seem to be a solution (QoS BoF this afternoon)
 - Omer to participate
 - Are there use cases from this group?
- Discuss scenario document with HPC profile group
 - Potential to include one profile with WS-Agreement + JSDL
- TerraGrid use cases for negotiation, e.g. co-allocation, offer+counteroffer

Current/planned Implementations



- VIOLA MSS
- CATNETS
- University of Munich (Tianchao)
- University of Georgia (semantic issues with SLAs)
- CREMONA (state?)
- CSS Resource Management System/Scheduler (planned)
- PHOSPHORUS (planned)
- SORMA (planned)
- G-Lambda (probably)