

Minutes of the CMM-WG session in GGF10

March 12, 2004

1 Administrative matters

- Presented GGF IPR policy
- Passed the attendance list (attendance: 22 people, 5 of them in CMM-WG mailing list)
- Note taker for minutes: Jem Treadwell
 - Session also recorded by Fred Maciel, mp3 file available in the CMM-WG page in GridForge (CMM_Session_MP3 file in the Meeting Materials and Minutes / GGF10 folder in the document manager; after the file is downloaded change the suffix to “.mp3”).
- Sections below follow sections in Fred’s presentation. Contents in sections 2 to 4 below were also explained in the in the OGSA-WG session on the day before.

2 WG background and work

- Original work (base management functionality) started in GGF8, but in GGF9 decided to move to OASIS WSDM TC to unify specs and avoid duplicate work. Work now being done in WSDM. WSDM work is being made public by OASIS.
- Now doing a gap analysis: what is missing on manageability in OGSA, what should be done (e.g. regarding resource models and management framework). Now working more or less as a subgroup of OGSA-WG and will move further in that direction.

3 OGSA management glossary

- Many basic terms still not well defined in OGSA, affecting discussions in both OGSA-WG and CMM-WG.
- Basic guideline used: don’t divide grid and non-grid meanings
- Resource: defined as manageable entity
 - Aligned with WSRF & WSDM
 - Superset of usage for pooled resources
- Resource management: generic term for scheduling and brokering, deployment; accounting and metering; monitoring (performance, availability etc.) and control; problem determination, fault management

- Resource manager: manager that implements one or more resource management functionalities
 - Fred: term is often ambiguous, and recommends avoiding it if a specific resource management functionality can be used instead

4 OGSA management framework

- Often not clear what was involved in management in OGSA, so had to create a framework. Serves as basis to OGSA work and for gap analysis.
- OGSA has several functions, e.g. job submission and deployment. Resources have interfaces to functionality that supports these functions – that's why functions in the diagram are extended down to the resource level. A given resource will have support for some functions, but not necessarily all of them – that's why functions overlap.
 - Improves existing OGSA taxonomy, using functions and interfaces instead of services.
 - Figure is a work-in-progress. Fred asks for feedback.
- Resource level: management of resources through native interfaces (SNMP, CIM etc.)
- Platform functions level: WSRF and WSDM used in OGSA to manage resources.
 - In WSRF we define a WS-resource, but need functionality on top to manage the resources – that's where WSDM comes in.
 - This is what the CMM-WG was born to do – put management on top of OGSI. OGSI became WSRF, and CMM became WSDM.
- OGSA functions level:
 - Functional interfaces (submit job, cancel job etc.) – they apply to resource managers
 - Manageability interfaces (job submission start/stop, job submission monitoring, etc.) – they apply to all OGSA functions

5 Short introduction to the WSDM spec

- Fred, David Snelling, Andrea Westerinen participating in WSDM, but still lacking people to be strong liaisons between OGSA & WSDM. Fred has also the action of finding out if there are overlaps between WSDM and OGSA.
- What is WSDM: OASIS Web Services Distributed Management TC, doing Management Using Web Services (MUWS) and Management Of Web Services (MOWS). Provides a uniform WSRF based way to access manageability of resources (not clear if WSDM formally agreed to use WSRF).

- WSDM schedule: see slide – v0.5 May '04, demo around May. August target for 1.0 spec.
 - Jay Unger: demo CIM-oriented? Fred: not sure if and how CIM is involved. Management target is a Web service, so uses MOWS model. Jay: relationship between modeling work in DMTF/WSDM? Fred: WSDM is at the meta-model level, need a way to map it down to each model (CIM, SNMP MIB). Bill Horn: expose CIM attributes etc. through Web services? Jay: I hope that's what they're going to do; seems like a 1.0 functionality.
 - Fred: no events in 0.5; lots of discussion still needed. Bill Horn: Difficult position because they're between 2 eventing technologies (CIM & WS-N).
- Functionality in WSDM 0.5 (MOWS only)
 - Identity: resourceID (URI), Name (for human consumption), version. Not clear how related to WSRF and WS-Addressing.
 - Metrics: object property. All metrics can be reset.
 - ♦ Jay: is metric a complex type? Intent is to use cut-and-paste to add to resource properties? Fred: yes, probably so (need to check XML).
 - ♦ Some discussion on relationship between metrics and the CIM model.
 - ♦ Fred: MUWS only has CurrentTime metric. Jay, surprised there's only one common metric; Bill: surprised if there's more than one.
 - ♦ Jay: metrics represent state, but resetting a metric doesn't affect the state of the resource – that's how I distinguish between state and metrics.
 - ♦ Bill: little unconventional in the way it handles cardinality between multiple observers and a single resource, when one observer can reset the metrics. Fred, yes, managers have to coordinate among themselves. resetAt will tell you when it was reset, so have some coherency. Bill: it's a novel thought.
 - ♦ Jay: one thing that's remarkably missing is any notion of dimensionality – what does one bit represent? Fred: I hope they won't make a blunder as big as forgetting units (so does Jay).
 - ♦ Andreas: what's resetAt? Fred: the time at which it was reset. Jay: Presumably reusing existing XML time value stuff? Fred: probably so (again, need to verify XML definitions to be sure).
 - Resource State: has 3 states (available, degraded, unavailable), and transitions between them.
 - ♦ Jay, to clarify: can only start an unavailable resource? David: no unavailable to degraded transition. Jay: graph goes from available to unavailable without going through a “quiesce” stage. Typical situation with a processor is that you can't stop it without quiescing, so do they have subsets of the state graph? Fred: yes (will explain later).

- ◆ Fred: there lots of discussion about just having 2 states, but ended up with 3 (Jay: good). Jay: large class of resources that cannot make the transition without an intermediate step. David: to a manager degraded is important state; user only cares about available/unavailable. Jay: so degraded is not only broken. David, yes, they gave up on a “coming up” state. Bill: any thoughts on how sub-states would fit into this: Fred: sub-states are not in the specification yet, but can have multiple levels of sub-states. Jay: case to be made (for symmetry if nothing else) from unavailable to degraded – I’m happy with the terminology (degraded means manageable but not useful). Rules of sub-state should be contained within the state graph – if it’s symmetrical then there are no restrictions.
- Expected v1.0 functionality: relationships, configuration/control, change description, events.
 - Jay: any discussion in WSDM on events and notification? Fred: discussion would take too long to achieve consensus, so was left as post-0.5 feature. Jay: they should start with the goal of separating themselves from the mechanism of message transmittal. If they do that they don’t need to worry what they use as basis. Worry about the meta-model, not the mechanism. David: way to deal with events is to point to the specification, just say an event happens here, not worrying about how.
- Final comments by Fred: expected big companies doing management software suites to create prototypes for demo. WSDM should have momentum, and we in GGF have to be very much aware of it and keep an eye on it.
- Sastri: ResourceProperties? David: WSDM using WS-RF language in their framework.

6 Gap analysis

- Objective is to find what’s missing in manageability in OGSA, and what needs to be done. Give work to fill gaps to other WG’s or spawn new WGs.
- Gap analysis can be conceptually viewed as a table: rows are the levels, columns are OGSA functions. Gaps are found by filling the table. Gives example for registry function.
- Status/Next Steps: Gaps so far:
 - Grid-specific events.
 - Manageability of OGSA functions.
- Academia-versus-industry gap: academia has less interest on, and awareness of, manageability, standards etc. For instance, the GMA doc represents resources as

services (aligned with CMM, WSDM, etc.), but proposes to create an own model of resources instead of reusing an existing one. When we start doing grid computing the pieces must come together so we have to think about the models – not much feedback so far in our WG.

- Next step: fill in the table (moving target given OGSA refactoring), plus detailed analysis of a few more services.
- Resource information models: many models exist – explicit ones (CIM, SNMP MIBs, etc), but there are implicit things like resource descriptions. Many models will be used simultaneously in a grid – need to coordinate semantics. Analysis is in preliminary state – looking forward to what needs to be done.

7 Future plans

- WSDM – work continues at OASIS
- Gap Analysis
 - Get discussions deeper into OGSA-WG – finish gap analysis by GGF11 and submit as informational document.
 - Teleconferences will be on-demand – time chosen according to availability of people needed – keep the WG status and submit as WG document.
- Jay's concern: no doubt that WSDM is doing a superb job, but it seems to me that we need to be sure that the people who are interested in CMM at least keep a monitoring view of WSDM – at GGF11 would like to see a much more substantive informational session delivered by key GGF participants in WSDM to see where WSDM stands and how it relates to the gap analysis – very important, because there's an interlock. David agrees. Fred: tried to do it this time but couldn't find anybody to give detailed explanation. Jay: we need to work at a higher level to make this happen, we're an important part (leading edge) of their constituency; need to communicate; would encourage them to take advantage of GGF. Need strong informational interlock between GGF/WSDM; this stuff is absolutely fundamental to OGSA; leave the WG in place if nothing else to overlay that activity.
- David: do we need to take a look at the CMM charter and realign it? We were happy to leave it off charter long enough to close down, but the energy is here, and there's enough interest to re-charter and keep going. Asks how many want to contribute to the gap analysis – about 5 people answer. How many want the info? Same. Jay: if we shut the WG down is there a mechanism to press the informational interlock (e.g., with WSDM). David: nobody is trying to kill the WG. Not a whole lot of sense to keep a WG without a specific thing we're supposed to be doing, but there's no such thing as a liaison group yet. Jay: could morph into a RG. Liaisons with other

standards bodies is great, but have to stay vigilant – can't throw it over the wall and hope that they do the things we need.