

# GGF11 CMM-WG session minutes

## 1 First session (presentation of the WSDM specs)

### 1.1 Administrative matters

- Presented GGF IPR policy
- Passed the attendance list (attendance: 39 people)
- Note taker for minutes: Fred Maciel
  - Session also recorded by Fred Maciel, mp3 file available in the CMM-WG page in GridForge (GGF11\_Session\_1\_MP3 file in the Meeting Materials and Minutes / GGF11 folder in the document manager; after the file is downloaded change the suffix to “.mp3”).
  - Heather’s presentation will be available in the same folder above when the IP and Copyright clearances are obtained.

### 1.2 Fred’s presentation

- Shows a chronological outline of the work of the CMM-WG, including the unification of the specs with the WSDM TC.
- Showed the OGSA management framework (the contents of section 3.1 of CMM-WG document) and explained the role of WSDM within OGSA. WSDM is part of the Infrastructure Services capability, serving as glue between other OGSA capabilities (which provide high-level Grid-related functionality) and the native manageability of the resources. MUWS (Management Using Web Services) will be used to access the manageability of resources, and MOWS (Management Of Web Services) will be used for the management of the services.
  - Abdeslem: aren’t the services resources also? Fred: yes, they are. This figure intends to show capabilities and interfaces, and the services only appear as resources. However, the OGSA spec lists services as the components of the capabilities, and the figure was changed to align the nomenclature, which creates this problem.

### 1.3 Heather’s presentation

- Introduction: background of WSDM
  - Large TC, 150 people on mailing list, 30 very active participants, many management vendors involved, broad representation
  - Winston Bumpus, the co-chair, is also DMTF president

- Explains MUWS and MOWS specs, usage of Web services platform and requirements
- Web Services architecture and the manageable resource
  - Some resources might talk Web services directly, others are accessed through an agent that talk Web services.
  - Manager's view: agent is transparent, manager sees the resource, i.e., although a manager talks to a resource through an agent, the interface the manager sees is the one of the resource (e.g. a printer), not the one of the agent.
  - Manager has a consistent view of the resources. Provides de-coupling of manageability interfaces.
- Why adding a new layer:
  - Managers need access to manageability end-to-end (across firewalls, across platforms, between different vendors, etc.)
  - Ubiquitous, low-entry
  - Jeff Frey: it's also important to say that extends the behavior of the resource, exposing it as more than original one. Heather agrees.
- Management Foundations
  - Uses XML, WSDL, WSRF, WS-Security, etc. as basis.
  - Need to define the management foundations, relationships between resources, meta-information, event format, and means for discovery. In the future will have to think about policy.
  - Question: information gathering, reservation? Heather: didn't get yet to reservation.
- Manageable resource: it is a Web service, provides an interface with manageability capabilities described in WSDL. It's also a WS-Resource (as defined in the WSRF specs).
  - Question: target for the spec? WSRF is in progress, how can be used? Heather: 1.0 released while other specs are still in progress, 2.0 will re-visit when related specs are completed.
- Capabilities: identity, metrics, operational state, configuration, correlatable names, relationships.
  - Operational state: explains the 3 states
    - ◆ David Snelling: missing transitions? Heather: current ones were the result of a long discussion. Chose the option that transitions are instantaneous. Fred: has degraded, but not starting state. Heather: DMTF working on state and behavior, and WSDM is working together with DMTF, so should have a better model later.

- ♦ Question: degraded is a changing resource attribute? Heather: meaning is resource specific. E.g., for Web services defined how the W3C states maps to the three states. David, Heather: naming the three states “red”, “yellow”, “green” would make it much easier to understand.
- ♦ Jeff Frye: these are states applied overall to resource, and to any usage of the resource. E.g., if a resource is shared by multiple contexts, the state might be available in one context but not on the other. Heather: the state is the state of the resource.
- ♦ Fred: Jay Unger often says that a resource may have multiple simultaneous “facets”, according to the management discipline: a provisioning facet, an execution facet, etc. (Comments by Fred and Jeff on composability of interfaces). We might need one state graph per facet, is it possible in WSDM? Heather: yes.
- ♦ Question: have interfaces to change states? Heather: yes.
- Explanation of WSDM metrics capability
  - ♦ Question: is there composability of types of metrics? Heather: you would extend the portType. WSDM will provide the base ones. Aggregating is not part of WSDM scope. Fred: aggregating across hosts is something that can be implementing by extending WSDM interfaces? Heather: this is responsibility of a metric aggregator. David: if your system aggregation process works, you get aggregation as part of the definition of your new entity, you don't have metric aggregation as a new concept.
  - ♦ Fred: in OGSA we have the information services with the producer and consumer services, not clear what is the relationship with WSDM. Producer and consumer are higher level and include aggregation. Heather: could use an intermediate.
  - ♦ (Long discussion on aggregated metrics and how to obtain them, and use cases)
  - ♦ Jeff: I believe that contents of the actual semantic meaning of the metrics will be management-discipline specific. Probably not the case that this definition is done in WSDM (Heather: we need to enable it). We have to start answering questions of where work occurs: OGSA, WSDM, DMTF, etc.
- Explanation of MOWS: based on MUWS, and defines a specific model for the management of Web services. Explanation of identification, metrics, operational state.
  - David: to have MOWS as an application of MUWS is a very good development strategy.
  - Question: what is the meaning of the metrics? Heather: overall, not user-based. Richard: there are ways to provide this information.
- Roadmap:

- 0.5: identification, metrics, operational state; successful interop testing
- 1.0: events and meta-information, extended operational state, extend metrics, relationships, configuration
  - ◆ James Clark: is there a lower-end to the services and to the use-cases to which WSDM apply? Heather: everything is composable, only identity and identification are required.
  - ◆ Alan: where is discovery? Heather: working on it, should have added to the list on slides.
  - ◆ Jeff: other dimension of the problem is when we decide to represent a resource with WSDM. What is the granularity of the resources that I want to express this way? The use cases will have to drive the granularity of the resources. Heather: what drives is having a business case. Jeff: draw the line across various groups working in this area to define this level of abstraction and treat this from this point down to implementation.
  - ◆ Question: is there a systematic process to match abstractions to use cases? Heather: not at the current point. David: it's possible to do, e.g. OGSA. But it's harder to do for standard than for a software product. David: interoperability test captured that.
- 2.0: probably in about a year
  - ◆ Fred: collections? Heather: perhaps in 1.0 spec.
- Explains relationships to other standards bodies
  - W3C: use WSDL, etc.
  - DMTF: Interop WG (rules to map CIM to WS interfaces), Utility WG (profiles for resources, Web services interfaces), State and Behavior WG defining state models for resources. Mapping to CIM model is a requirement.
    - ◆ Jeff: WSDM should enable CIM even if it's not "desirable" to do so? It seems that we want to be careful not to limit ourselves to representing existing models in a different way, but to use this as an opportunity to re-factor. Not sure if all aspects of CIM should be represented. We could bring forth the good things and leave the bad things behind. Heather: the Interop WG rules won't be straightforward but they will provide the guidance that we need for this mapping to be done the right way. Tom: it's more in the lines of SNIA, SMI-S.
  - GGF: related to CMM-WG and OGSA-WG
  - Jeff: need to formalize relationships (e.g., who "owns" the definition of the "job" of EMS). Fred: tricky – we need expertise on what the job is, which is in the GGF, and modeling in general, which is outside.
- Session adjourned.

## 2 Second session (presentation by Fred on the gap analysis)

### 2.1 Administrative matters

- Presented GGF IPR policy
- Passed the attendance list (attendance: 20 people)
- Note taker for minutes: Jem Treadwell
  - Session also recorded by Fred Maciel, mp3 file available in the CMM-WG page in GridForge (GGF11\_Session\_2\_MP3 file in the Meeting Materials and Minutes / GGF11 folder in the document manager; after the file is downloaded change the suffix to “.mp3”).

### 2.2 Introduction

- Showed a chronological outline of the work of the CMM-WG to explain the context of the gap analysis.

### 2.3 Resource Models

- Fred discussed Jay's proposal resource models. Differently from Fred's presentation in the OGSA-WG session, which was neutral and diplomatic, adds CMM-WG's point of view on the issue.
  - Some resource descriptions have implicit resource models, which is an issue that we have to be aware of in the GGF.
  - Explains the difference between the semantics and rendering of a model.
  - Several models exist. Jay's text at times implies that we need a single model, which is unrealistic. However, we can, and should coordinate the semantics among the many models expected to be used in OGSA. Ultimately, we need a framework in OGSA that coordinates semantics and renderings.
  - Jay proposed for us to define our requirements, analyze existing models, and select partnerships. However, we don't have the knowledge on models and enough people to perform this analysis in the OGSA and CMM WGs, so should start partnering from the start.

### 2.4 Gap Analysis

- Objective: to find out what is missing, but OGSA specs still do not have detailed descriptions of all the services, so not always possible to do a detailed gap analysis.
- Shows the OGSA manageability framework figure, showing the levels of interfaces.
  - Jeff: basic question, perhaps controversial. Within OGSA, will any of the OGSA management functionality use anything other than the WSRF/MUWS interfaces,

for instance, for job management or certain ways to do provisioning. Latha: if there are gaps then we will drive the requirements back into MUWS – we don't yet understand the problem completely – factor out the management interfaces and look to see if WSDM/MUWS can satisfy it. Jeff: OK, that's part of the answer.

- Jeff, refining the question: pick an OGSA capability – if that capability wanted to get data from the model, would its view necessarily be a WSRF view? Fred: in my opinion, not a MUST, but a SHOULD. If you can bypass and go directly to the model, fine, but it won't help interoperability (CMM-WG document has this view).
- Jeff: OK, I think it's inevitable that this will happen, but we need to decide if OGSA will sanction out-of-band access to the underlying state model. If we allow, then we're going to have a broken system, or at least it's going to be no better than it is today. We need to bring it out as WSRF/MUWS interfaces. Latha: goes to the heart of what is an OGSA-compliant service. Jeff: agree that a Grid can have other things beside services, but should manageable things be expressed as other than Web services? In my opinion there's no requirement to express applications etc. as Web services, but this is about management. So do we accept anything other than a service expression, and I think the answer should be "no". Latha: we pretty much do say that in the infrastructure assumptions in the OGSA doc. Jeff, OK, that's good, the whole purpose is interoperability. If you don't play, you don't play, but I'm not going to define an architecture that accommodates your not playing. Heather: MUST does not mean that it's not in the Grid, it means that it's not OGSA. Latha/Jem: the OGSA statement on WSRF is not specifically about management – more about the general underlying infrastructure of WSRF. Jeff: that's probably a different conversation, and we should be very specific that manageability shows layers of WSRF with MUWS etc. Latha: yes. Jeff: intent is that we lead the way and show the world that there is a common set of interfaces with schema etc. Latha: yes, and the first thing is to factor out the manageability interfaces.
- Roger Reich: are people in the OGSA-WG defining execution management and data services? Jeff: yes. There's some subtlety here. Idea of a job manager, scheduling, provisioning etc. – they are very much management functions – the interfaces should be specified in terms of WSRF/MUWS/EMS interfaces. Heather corrects: job is a resource so WSDM applies, but job scheduling will have WSRF interfaces which are independent of WSDM. Jeff agrees.
- Jeff, on data: I don't consider the ability to express a piece of relational data as an XML document to be a management function, but I do consider the ability to replicate data etc. to be a management function (same for other similar examples) – I'd like to see more distinction between the two – question for the OGSA. All I'm

suggesting is that we would do ourselves a lot of good if we got very specific about the problems we're tacking and core competencies.

- Roger: the way to integrate and federate all resources is by using a common model. Jeff: OGSA services should leverage a unified identity provided by MUWS, or else we're broke. Part of the problem with legacy is that it can't be federated. Solution is hard, and must be done incrementally; will take 10 years. Roger: yes, lop off a chunk and go after it – everyone will be watching us and see if we can unify the industry in, say, execution management services.
- Jeffrin: if you try to manage the resources from the OGSA layer you're dealing with millions of objects at one time. You can use proxies so you don't have to change the interfaces and wait 10 years. Jeff, that's a granularity thing – need to define a set of interfaces and implement them at whatever granularity you choose. Roger: get a stake in the ground, get our existing products and write WSDM interfaces for them.
- Heather: in the diagram, in the specific manageability services, are you managing the security services themselves? Fred: yes. Jeffrin: why do we need generic and specific manageability interfaces? Fred: generic is common for all services running in the infrastructure – e.g. start/stop the service. Heather: are "specific manageability interfaces" are missing for resources? Fred postpones discussion because of lack of time.
- Roger: how is the agreement going to be reached among companies? Jeff: from an IBM perspective we're behind the adoption of standards, and we will implement in our products capabilities compliant with the standards, that's why I'm so heavily involved in GGF etc.
- Fred explains issues in base and generic manageability interfaces.
  - Heather: are you looking for a mapping to JMX? Fred: can't we go through CIM? Heather: no mapping, but there's a working group in the DMTF working on it. But we can go directly from WSDM to JMX.
  - Jeff: why is the mapping from WSDM to other models important? Fred: resources are defined by the model [semantics], but WSDM is mostly the means to access this model [i.e., a rendering]. Jeff: so it's a job to express resources – not an implementation statement (Fred agrees). Jeff: there may be resources that are not yet expressed in any model – don't know which – we are extending the system with new capabilities. You're saying that we believe that all the resources we care about in OGSA are represented in an existing model today (Fred: if not, we will need to define); we need to round out/define the resources, and whether they exist in some form in some other model is a secondary question; if they do we can steal/extract etc. Probably 90% are expressed in CIM or JMX etc., but it's not the mapping out that's interesting.

- Fred explains issues in the specific manageability interfaces of each OGSA capability:
  - Execution management services
  - Information services
    - ◆ Heather: what do you mean by a push model? Discussion on historical data and its persistence. Igor: WSDM should address a push model. Comments that it's broader than grid management, and may be in the domain of the manager, rather than manageability.
    - ◆ Heather: what is the manageability of a registry? Fred: need to monitor a registry, e.g. it may be overloaded so we need to produce a new instance.
  - Data services
  - Security services
  - Self management, context services, and resource management services: current level of detail still doesn't allow gap analysis (Fred comments on manageability on each of them).
- Summary: overall concerns are that we need to work on models, and manageability interfaces for many of the services are not there.
- Review plans for the spec: specification will not be changed until the end of June so that people interested can review it. Document will be reviewed in the beginning of July based on feedback and submitted to GGF as informational document.

## 2.5 Future Plans

- Fred explains future plans
  - WSDM work continues in OASIS
  - CMM-WG probably becomes design team of OGSA-WG (already working as such, i.e., form changes, but not contents of work)
  - Liaisons: still need work, but pieces are coming together.
- Heather: what's the plan for closing the gaps? Fred: point out the gaps to people related to each field. Heather: so gaps become action items? Fred, yes.
- Igor: what are the major gaps? Fred: manageability is not there, and we need to work on models. Igor: so you [OGSA] will define manageability interfaces. I didn't see too many gaps in the resources. Discussion on OGSA job management. Heather: will gaps become WSDM requirements? Igor: we need your use cases. Fred: current list is not exhaustive. Heather: are you [Fred] going to be the one driving the gap resolution? Fred: yes.
- Session adjourned.