DSP0205 Status: Preliminary

WBEM Discovery Using the Service Location Protocol

1.0.0 January 27, 2004

Abstract

Web-Based Enterprise Management (WBEM) is a set of management and Internet standard technologies developed to unify the management of enterprise computing environments. WBEM provides the ability for the industry to deliver a well-integrated set of standard-based management tools leveraging the emerging Web technologies. The DMTF has developed a core set of standards that make up WBEM, which includes a data model, the Common Information Model (CIM); an encoding specification, Representation of CIM using XML specification; and a transport mechanism, CIM Operations over HTTP.

This specification defines WBEM discovery using SLP Version 2.

The specification is intended for WBEM Server and WBEM Client developers.

Change History

Version 1.0a	August 15, 2003	Initial Draft
Version 1.0b	October 21, 2003	Cleanup and review at F2F 10/15
Version 1.0	January 27, 2004	Preliminary Version

Notice

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Table of Contents

1 Scope 7
2 Reference 7
3 Definitions, symbols, abbreviations, and conventions 7
4 WBEM Discovery using the SLP 7
4.1 WBEM Server 7

Foreword

The Distributed Management Task Force, Inc. (DMTF), developer of CIM, is the industry organization leading the development, adoption, and interoperability of management specifications and initiatives for enterprise and Internet environments.

This specification was processed and approved by the DMTF. Approval of this specification does not necessarily imply that all members voted for approval.

Introduction

The WBEM Discovery using SLP specification defines WBEM Discovery using the Service Location Protocol (SLP) Version 2.

The Service Location Protocol (SLP) is defined by the Internet Engineering Task Force (IETF) in RFC 2608. The reader is expected to have a working knowledge of SLP and WBEM.

This specification along with the WBEM SLP Template, DSP0206 is the complete specification for WBEM Discovery using SLP.

The WBEM Discovery using SLP specification is divided into the following clauses:

- Clause 1 is the scope;

- Clause 2 enumerates the normative references that apply to this specification;

- Clause 3 describes the definitions, symbols, conventions and abbreviations used in this specification;

- Clause 4 describes the WBEM Discovery using SLP;

Annexes A through B are for information purposes only.

1 Scope

This specification describes an efficient method for WBEM Clients to discover WBEM Servers and WBEM Server capabilities.

The objectives of this specification are to:

- provide a mechanism that allows WBEM Clients to discover WBEM Servers
- use existing standards and protocols for rapid development and deployment
- provide a mechanism that scales from small environments to enterprise environments
- provide WBEM Clients sufficient information in the advertisement to determine the WBEM Servers to communicate with
- scope the level of advertisement to avoid security holes

The Service Location Protocol (SLP) provides a flexible and scalable framework for providing clients, represented by User Agents (UA), with access to information about the existence, location, and configuration of services, represented by Service Agents (SA).

Traditionally, clients have had to know the name and access method of services. The SLP eliminates the need for a client to know the name and access point of services. With SLP the client supplies a request for the desired type of service. The client receives information regarding the requested services.

The SLP uses Directory Agents (DA) that offer a centralized repository for advertised services. This allows the SLP to scale from very small to very large environments.

WBEM Servers acting as Service Agents (SA) advertise their services. WBEM Clients acting as User Agents (UA) query for the WBEM Server(s). A Directory Agent (DA) may be deployed in environments where there are many User and Service Agents.

2 References

"WBEM SLP Template", Version 1.0 DSP0206, DMTF, 20th October 2003.
"Common Information Model (CIM) Specification", Version 2.2 DSP0004, DMTF, 14th June 1999.
"Common Information Model (CIM) Schema", Version 2.8 preliminary, DMTF.
“CIM Operations over HTTP” Version 1.2, DSP0200, DMTF, September 2002.
"Service Location Protocol, Version 2", IETF RFC 2608, June 1999 (http://www.ietf.org/rfc/rfc2608.txt)
"Service Templates and Service: Schemes ", IETF RFC 2609, June 1999 (http://www.ietf.org/rfc/rfc2609.txt)
"Key Words for Use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, March 1997

3 Definitions, symbols, abbreviations, and conventions

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in RFC 2119.

4 WBEM Discovery using the SLP

This specification defines a mechanism that allows WBEM Servers to advertise their service access point and capabilities using the SLP.

This specification requires the information in the WBEM SLP Template specification to be complete.

4.1 WBEM Server

A WBEM Server MUST be a Service Agent (SA) as defined by the SLP.

A WBEM Server MUST advertise its services using the WBEM SLP Template.

A WBEM Server MUST provide values for each required property in the WBEM SLP Template.

A WBEM Server SHOULD support all attributes listed in the WBEM SLP Template.

A WBEM Server MUST provide a separate SLP advertisement for each remote service access point of the CIM object manager (i.e., each instance of CIM_ObjectManagerCommunicationMechanism class).

The SLP advertisement contains a single unique ID for a WBEM Server as defined in the Service ID section of the WBEM SLP Template. The entry in the service-location-tcp attribute defines the address/port/CommunicationMechanism that a WBEM Server is advertising.

A WBEM Server MUST reregister the advertisement before the time period expires as defined in the SLP.

A WBEM Server SHOULD deregister any advertisements on shutdown.

A WBEM Server on initialization MUST advertise its services.

If the attributes change a WBEM Server MUST update the advertisement. If a WBEM Server registered with a DA, it MUST update the DA.

Appendix A – Bibliography

Unified Modeling Language (UML) from the Open Management Group (OMG) - http://www.omg.org/uml/>

Service Location Protocol for Enterprise Networks, James Kempf, Pete St. Pierre, Wiley, 1999, ISBN 0-471-31587-7

Appendix B – Acknowledgements

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