

INTERNATIONAL STANDARD

**OPC unified architecture -
Part 12: Discovery and global services**



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CONTENTS

FOREWORD	9
1 Scope	11
2 Normative references	11
3 Terms, definitions and conventions	12
3.1 Terms and definitions	12
3.2 Abbreviations and symbols	14
4 The Discovery Process	15
4.1 Overview	15
4.2 Registration and Announcement of Applications	15
4.2.1 Overview	15
4.2.2 Hosts with a LocalDiscoveryServer	15
4.2.3 Hosts without a LocalDiscoveryServer	16
4.3 The discovery process for Clients to find Servers	16
4.3.1 Overview	16
4.3.2 Simple Discovery with a DiscoveryUrl	17
4.3.3 Local Discovery	17
4.3.4 MulticastSubnet Discovery	18
4.3.5 Global Discovery	19
4.3.6 Combined Discovery Process for Clients	19
4.4 The Discovery Process for Reverse Connections	20
4.4.1 Overview	20
4.4.2 Out-of-band Discovery	20
4.4.3 Global Discovery for Reverse Connections	21
5 Local Discovery Server	21
5.1 Overview	21
5.2 Security Considerations for Multicast DNS	22
5.3 Network Architectures	22
5.3.1 Overview	22
5.3.2 Single MulticastSubnet	22
5.3.3 Multiple MulticastSubnet	23
5.3.4 No MulticastSubnet	23
5.3.5 Domain names and MulticastSubnets	24
6 Global Discovery Server	25
6.1 Overview	25
6.2 Roles and privileges	25
6.3 Client connections to global services	25
6.4 Local Discovery	26
6.5 Application registration workflow	27
6.6 Information Model	29
6.6.1 Overview	29
6.6.2 Directory	30
6.6.3 DirectoryType	30
6.6.4 FindApplications	32
6.6.5 ApplicationRecordDataType	32
6.6.6 RegisterApplication	33
6.6.7 UpdateApplication	34

6.6.8	UnregisterApplication	35
6.6.9	GetApplication	36
6.6.10	QueryApplications	37
6.6.11	QueryServers (deprecated).....	39
6.6.12	ApplicationRegistrationChangedAuditEventType.....	41
7	Certificate Management.....	41
7.1	Overview	41
7.2	Roles and Privileges	42
7.3	Pull Management	43
7.4	Push Management	44
7.5	Application Setup.....	45
7.6	Pull Management workflow	45
7.7	Push Management workflow.....	48
7.8	Common Information Model	50
7.8.1	Overview	50
7.8.2	TrustLists	50
7.8.3	CertificateGroups	60
7.8.4	CertificateTypes	63
7.9	Information Model for Pull Certificate Management	68
7.9.1	Overview	68
7.9.2	CertificateDirectoryType	68
7.9.3	StartSigningRequest.....	70
7.9.4	StartNewKeyPairRequest	72
7.9.5	FinishRequest	74
7.9.6	RevokeCertificate	75
7.9.7	GetCertificateGroups	76
7.9.8	GetCertificates	77
7.9.9	GetTrustList.....	78
7.9.10	GetCertificateStatus	79
7.9.11	CheckRevocationStatus.....	80
7.9.12	CertificateRequestedAuditEventType.....	81
7.9.13	CertificateDeliveredAuditEventType.....	81
7.10	Information Model for Push Certificate Management	82
7.10.1	Overview	82
7.10.2	ServerConfiguration.....	84
7.10.3	ServerConfigurationType	84
7.10.4	UpdateCertificate.....	86
7.10.5	GetCertificates	88
7.10.6	ApplyChanges	88
7.10.7	CreateSigningRequest.....	89
7.10.8	CancelChanges	91
7.10.9	GetRejectedList.....	91
7.10.10	ResetToServerDefaults.....	92
7.10.11	TransactionDiagnosticsType.....	93
7.10.12	TransactionErrorType	94
7.10.13	CertificateUpdateRequestedAuditEventType.....	94
7.10.14	CertificateUpdatedAuditEventType	95
8	KeyCredential Management.....	95
8.1	Overview	95

8.2	Roles and Privileges	96
8.3	Pull Management	96
8.4	Push Management	97
8.5	Information Model for Pull Management	98
8.5.1	Overview	98
8.5.2	KeyCredentialManagementFolderType	99
8.5.3	KeyCredentialManagement	99
8.5.4	KeyCredentialServiceType	99
8.5.5	StartRequest	100
8.5.6	FinishRequest	102
8.5.7	Revoke	103
8.5.8	KeyCredentialAuditEventType	104
8.5.9	KeyCredentialRequestedAuditEventType	104
8.5.10	KeyCredentialDeliveredAuditEventType	105
8.5.11	KeyCredentialRevokedAuditEventType	105
8.6	Information Model for Push Management	106
8.6.1	General	106
8.6.2	KeyCredentialConfigurationFolderType	106
8.6.3	CreateCredential	107
8.6.4	KeyCredentialConfiguration	108
8.6.5	KeyCredentialConfigurationType	108
8.6.6	GetEncryptingKey	109
8.6.7	UpdateCredential	110
8.6.8	DeleteCredential	111
8.6.9	KeyCredentialUpdatedAuditEventType	111
8.6.10	KeyCredentialDeletedAuditEventType	112
9	AuthorizationServices	112
9.1	Overview	112
9.2	Roles and Privileges	113
9.3	Implicit	113
9.4	Explicit	114
9.5	Chained	115
9.6	Information model for requesting Access Tokens	116
9.6.1	Overview	116
9.6.2	AuthorizationServicesFolderType	117
9.6.3	AuthorizationServices	117
9.6.4	AuthorizationServiceType	118
9.6.5	RequestAccessToken	118
9.6.6	GetServiceDescription	120
9.6.7	AccessTokenIssuedAuditEventType	120
9.7	Information Model for Configuring Servers	121
9.7.1	Overview	121
9.7.2	AuthorizationServiceConfigurationFolderType	121
9.7.3	AuthorizationServices	122
9.7.4	AuthorizationServiceConfigurationType	122
10	Namespaces	123
10.1	Namespace Metadata	123
10.2	Handling of OPC UA Namespaces	123
Annex A (informative)	Deployment and configuration	125

A.1	Firewalls and discovery	125
A.2	Resolving References to Remote Servers	127
Annex B (normative)	NodeSet and Constants	129
B.1	NodeSet	129
B.2	Numeric Node Ids	129
Annex C (normative)	OPC UA Mapping to mDNS	130
C.1	DNS Server (SRV) record syntax	130
C.2	DNS Text (TXT) record syntax	130
C.3	DiscoveryUrl mapping	131
Annex D (normative)	Server Capability Identifiers	132
Annex E (normative)	DirectoryServices	133
E.1	Global Discovery via Other Directory Services	133
E.2	UDDI.....	133
E.3	LDAP.....	134
Annex F (normative)	Local Discovery Server	136
F.1	Certificate Store Directory Layout	136
F.2	Installation Directories on Windows	137
Annex G (normative)	Application Setup.....	138
G.1	Application Setup with Pull Management.....	138
G.2	Application Setup with the Push Management.....	138
G.3	Setting Permissions	139
Annex H (informative)	Comparison with RFC 7030.....	140
H.1	Overview	140
H.2	Obtaining CA Certificates.....	140
H.3	Initial Enrolment.....	140
H.4	Client Certificate Reissuance	141
H.5	Server Key Generation.....	141
H.6	Certificate Signing Request (CSR) Attributes Request	141
Bibliography		142
Figure 1 – The Registration Process with an LDS		16
Figure 2 – The Simple Discovery Process.....		17
Figure 3 – The Local Discovery Process		18
Figure 4 – The MulticastSubnet Discovery Process.....		18
Figure 5 – The Global Discovery Process		19
Figure 6 – The Discovery Process for Clients.....		20
Figure 7 – The Global Discovery Process for Reverse Connections		21
Figure 8 – The Single MulticastSubnet Architecture		22
Figure 9 – The Multiple MulticastSubnet Architecture.....		23
Figure 10 – The No MulticastSubnet Architecture		24
Figure 11 – The Relationship between GDS and other components		26
Figure 12 – Application Registration Workflow		28
Figure 13 – The Address Space for the GDS		30
Figure 14 – The Pull Management Model for Certificates		43
Figure 15 – The Push Certificate Management Model		44
Figure 16 – Certificate Pull Management workflow		46

Figure 17 – The Pull Management Private Key options	47
Figure 18 – The Certificate Push Management workflow	49
Figure 19 – The Push Management Private Key options	50
Figure 20 – The Certificate Management AddressSpace for the GlobalDiscoveryServer	68
Figure 21 – The AddressSpace for the Server that supports Push Management.....	82
Figure 22 – The Transaction Lifecycle when using PushManagement	83
Figure 23 – The Pull Model for KeyCredential Management	97
Figure 24 – The Push Model for KeyCredential Management	98
Figure 25 – The Address Space used for Pull KeyCredential Management.....	98
Figure 26 – The Address Space used for Push KeyCredential Management.....	106
Figure 27 – Roles and AuthorizationServices	113
Figure 28 – Implicit Authorization.....	114
Figure 29 – Explicit Authorization.....	115
Figure 30 – Chained Authorization	116
Figure 31 – The Model for Requesting Access Tokens from AuthorizationServices	117
Figure 32 – The Model for Configuring Servers to use AuthorizationServices.....	121
Figure A.1 – Discovering Servers outside a firewall	125
Figure A.2 – Discovering Servers behind a firewall	126
Figure A.3 – Using a Discovery Server with a firewall	127
Figure A.4 – Following References to remote Servers.....	128
Figure E.1 – The UDDI or LDAP Discovery Process.....	133
Figure E.2 – UDDI Registry Structure	134
Figure E.3 – Sample LDAP Hierarchy	135
Table 1 – Well-known Roles for a GDS	25
Table 2 – Privileges for a GDS.....	25
Table 3 – Application Registration Workflow Steps	29
Table 4 – Directory Object Definition.....	30
Table 5 – DirectoryType Definition	31
Table 6 – FindApplications Method AddressSpace Definition	32
Table 7 – ApplicationRecordDataType Structure	33
Table 8 – ApplicationRecordDataType Definition	33
Table 9 – RegisterApplication Method AddressSpace Definition.....	34
Table 10 – UpdateApplication Method AddressSpace Definition.....	35
Table 11 – UnregisterApplication Method AddressSpace Definition.....	36
Table 12 – GetApplication Method AddressSpace Definition	36
Table 13 – ApplicationRecordDataType to ApplicationDescription Mapping.....	37
Table 14 – QueryApplications Method AddressSpace Definition.....	39
Table 15 – ApplicationRecordDataType to ServerOnNetwork Mapping.....	39
Table 16 – QueryServers Method AddressSpace Definition	41
Table 17 – ApplicationRegistrationChangedAuditEventType Definition.....	41
Table 18 – Well-known Roles for a CertificateManager	42
Table 19 – Well-known Roles for Server managed by a CertificateManager	42

Table 20 – Privileges for a CertificateManager.....	43
Table 21 – Certificate Pull Management workflow steps.....	47
Table 22 – TrustListType Definition.....	51
Table 23 – OpenWithMasks Method AddressSpace Definition.....	52
Table 24 – CloseAndUpdate Method AddressSpace Definition.....	54
Table 25 – AddCertificate Method AddressSpace Definition.....	55
Table 26 – RemoveCertificate Method AddressSpace Definition	56
Table 27 – TrustListDataType Structure.....	56
Table 28 – TrustListDataType Definition	56
Table 29 – TrustListMasks Enumeration	57
Table 30 – TrustListMasks Definition	57
Table 31 – TrustListValidationOptions Values.....	57
Table 32 – TrustListValidationOptions Definition	58
Table 33 – TrustListOutOfDateAlarmType definition.....	58
Table 34 – TrustListUpdateRequestedAuditEventType Definition	59
Table 35 – TrustListUpdatedAuditEventType Definition.....	59
Table 36 – CertificateGroupType Definition.....	60
Table 37 – GetRejectedList Method AddressSpace Definition	62
Table 38 – CertificateGroupFolderType Definition.....	62
Table 39 – CertificateType Definition	63
Table 40 – ApplicationCertificateType Definition	63
Table 41 – HttpsCertificateType Definition	64
Table 42 – RsaMinApplicationCertificateType Definition	64
Table 43 – RsaSha256ApplicationCertificateType Definition	65
Table 44 – EccApplicationCertificateType Definition	65
Table 45 – EccNistP256ApplicationCertificateType Definition	65
Table 46 – EccNistP384ApplicationCertificateType Definition	66
Table 47 – EccBrainpoolP256r1ApplicationCertificateType Definition.....	66
Table 48 – EccBrainpoolP384r1ApplicationCertificateType Definition.....	67
Table 49 – EccCurve25519ApplicationCertificateType Definition.....	67
Table 50 – EccCurve448ApplicationCertificateType Definition	67
Table 51 – CertificateDirectoryType ObjectType Definition.....	69
Table 52 – StartSigningRequest Method AddressSpace Definition	72
Table 53 – StartNewKeyPairRequest Method AddressSpace Definition.....	74
Table 54 – FinishRequest Method AddressSpace Definition.....	75
Table 55 – Revoke Method AddressSpace Definition	76
Table 56 – GetCertificateGroups Method AddressSpace Definition	77
Table 57 – GetCertificates Method AddressSpace Definition.....	78
Table 58 – GetTrustList Method AddressSpace Definition.....	79
Table 59 – GetCertificateStatus Method AddressSpace Definition.....	80
Table 60 – CheckRevocationStatus Method AddressSpace Definition	81
Table 61 – CertificateRequestedAuditEventType Definition.....	81
Table 62 – CertificateDeliveredAuditEventType Definition.....	82

Table 63 – ServerConfiguration Object Definition	84
Table 64 – ServerConfigurationType Definition	85
Table 65 – UpdateCertificate Method AddressSpace Definition	87
Table 66 – GetCertificates Method AddressSpace Definition	88
Table 67 – ApplyChanges Method AddressSpace Definition	89
Table 68 – CreateSigningRequest Method AddressSpace Definition	90
Table 69 – CancelChanges Method AddressSpace Definition	91
Table 70 – GetRejectedList Method AddressSpace Definition	92
Table 71 – ResetToServerDefaults Method AddressSpace Definition	93
Table 72 – TransactionDiagnosticsType Definition	93
Table 73 – TransactionErrorType Structure	94
Table 74 – TransactionErrorType Definition	94
Table 75 – CertificateUpdateRequestedAuditEventType Definition	94
Table 76 – CertificateUpdatedAuditEventType Definition	95
Table 77 – Well-known Roles for a KeyCredentialService	96
Table 78 – Well-known Roles for Server managed by a KeyCredentialService	96
Table 79 – Privileges for a KeyCredentialService	96
Table 80 – KeyCredentialManagementFolderType Definition	99
Table 81 – KeyCredentialManagement Object Definition	99
Table 82 – KeyCredentialServiceType Definition	100
Table 83 – StartRequest Method AddressSpace Definition	102
Table 84 – FinishRequest Method AddressSpace Definition	103
Table 85 – Revoke Method AddressSpace Definition	104
Table 86 – KeyCredentialAuditEventType Definition	104
Table 87 – KeyCredentialRequestedAuditEventType Definition	105
Table 88 – KeyCredentialDeliveredAuditEventType Definition	105
Table 89 – KeyCredentialRevokedAuditEventType Definition	106
Table 90 – KeyCredentialConfigurationFolderType Definition	107
Table 91 – CreateCredential Method AddressSpace Definition	108
Table 92 – KeyCredentialConfiguration Object Definition	108
Table 93 – KeyCredentialConfigurationType Definition	108
Table 94 – GetEncryptingKey Method AddressSpace Definition	110
Table 95 – UpdateCredential Method AddressSpace Definition	111
Table 96 – DeleteCredential Method AddressSpace Definition	111
Table 97 – KeyCredentialUpdatedAuditEventType Definition	112
Table 98 – KeyCredentialDeletedAuditEventType Definition	112
Table 99 – Well-known Roles for an AuthorizationService	113
Table 100 – Privileges for an AuthorizationService	113
Table 101 – AuthorizationServicesFolderType Definition	117
Table 102 – AuthorizationServices Object Definition	117
Table 103 – AuthorizationServiceType Definition	118
Table 104 – RequestAccessToken Method AddressSpace Definition	119
Table 105 – GetServiceDescription Method AddressSpace Definition	120

Table 106 – AccessTokenIssuedAuditEventType Definition	121
Table 107 – AuthorizationServicesFolderType Definition.....	122
Table 108 – AuthorizationServices Object Definition	122
Table 109 – AuthorizationServiceConfigurationType Definition	122
Table 110 – NamespaceMetadata Object for this Document	123
Table 111 – Namespaces used in this document.....	124
Table C.1 – Allowed mDNS service names	130
Table C.2 – DNS TXT record string format.....	131
Table C.3 – DiscoveryUrl to DNS SRV and TXT record mapping.....	131
Table D.1 – Examples of CapabilityIdentifiers	132
Table E.1 – UDDI tModels	134
Table E.2 – LDAP Object Class Schema.....	135
Table F.1 – Application Certificate Store Directory Layout	136
Table H.1 – Verifying that a Server is allowed to Provide Certificates	140
Table H.2 – Verifying that a Client is allowed to request Certificates	140

INTERNATIONAL ELECTROTECHNICAL COMMISSION

OPC unified architecture - Part 12: Discovery and Global Services

FOREWORD

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This second edition cancels and replaces the first edition published in 2020. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) addition of a "Quantity Model" which can be referenced from EngineeringUnit Properties. The model defines quantities and assigned units. In addition it provides alternative units and the conversion to them;

b) addition of rules for ValuePrecision Property:

- can also be used for other subtypes like Duration and Decimal.
- additional rules when ValuePrecision has negative values.

The text of this International Standard is based on the following documents:

Draft	Report on voting
65E/1051/CDV	65E/1097/RVC

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

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Italics are also used to denote the name of a service input or output parameter or the name of a structure or element of a structure that are usually defined in tables.

The *italicized terms and names* are, with a few exceptions, written in camel-case (the practice of writing compound words or phrases in which the elements are joined without spaces, with each element's initial letter capitalized within the compound). For example, the defined term is *AddressSpace* instead of Address Space. This makes it easier to understand that there is a single definition for *AddressSpace*, not separate definitions for Address and Space.

A list of all parts in the IEC 62541 series, published under the general title *OPC Unified Architecture*, can be found on the IEC website.

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- reconfirmed,
- withdrawn, or
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1 Scope

This part of IEC 62541 specifies how OPC Unified Architecture (OPC UA) *Clients* and *Servers* interact with *DiscoveryServers* when used in different scenarios. It specifies the requirements for the *LocalDiscoveryServer*, *LocalDiscoveryServer-ME* and *GlobalDiscoveryServer*. It also defines information models for *Certificate* management, *KeyCredential* management and *AuthorizationServices*.

Annex A informatively discusses deployment and configuration aspects.

Annex B defines *NodeSet* and numeric *NodeIds*.

Annex F provides installation rules for the LDS.

Annex H compares the *Certificate* management defined in this document with IETF RFC 7030.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 62541-1, *OPC Unified Architecture - Part 1: Overview and Concepts*

IEC 62541-2, *OPC Unified Architecture - Part 2: Security Model*

IEC 62541-3, *OPC Unified Architecture - Part 3: Address Space Model*

IEC 62541-4, *OPC Unified Architecture - Part 4: Services*

IEC 62541-5, *OPC Unified Architecture - Part 5: Information Model*

IEC 62541-6, *OPC Unified Architecture - Part 6: Mappings*

IEC 62541-7, *OPC Unified Architecture - Part 7: Profiles*

IEC 62541-9, *OPC Unified Architecture - Part 9: Alarms and Conditions*

IEC 62541-14, *OPC Unified Architecture - Part 14: PubSub*

IEC 62541-17, *OPC Unified Architecture - Part 17: Alias Names*

IEC 62541-20, *OPC Unified Architecture - Part 20: File Transfer*

IEC 62541-21, *OPC Unified Architecture - Part 21: Device Onboarding*

ITU-T Recommendation X.500 | ISO/IEC 9594-1, *Information technology - Open Systems interconnection - The Directory: Overview of concepts, models and services*

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IETF RFC 7030, Pritikin M., Yee P.E. and Harkins D., "Enrollment over Secure Transport", October 2013, available at <https://datatracker.ietf.org/doc/html/rfc7030>

DI, *OPC Unified Architecture for Devices (DI)*, available at <https://opcfoundation.org/documents/10000-100>

ADI, *OPC Unified Architecture for Analyzer Devices (ADI)*, available at <http://www.opcfoundation.org/documents/10020>

PLCopen, *OPC Unified Architecture / PLCopen Information Model*, available at <http://www.opcfoundation.org/documents/30000>

FDI, *OPC Unified Architecture for FDI*, available at <http://www.opcfoundation.org/documents/30080>

ISA-95, *ISA-95 Common Object Model*, available at <http://www.opcfoundation.org/documents/10030>

IEEE Std 802.1AR-2018, *IEEE Standard for Local and Metropolitan Area Networks - Secure Device Identity*, available at https://standards.ieee.org/standard/802_1AR-2018.html
