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Amendment 3
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SERIES Y: GLOBAL INFORMATION INFRASTRUCTURE, INTERNET PROTOCOL ASPECTS AND NEXT-GENERATION NETWORKS

Next Generation Networks – Available

Carrier grade open environment components

Amendment 3

CAUTION !

PREPUBLISHED RECOMMENDATION

This prepublication is an unedited version of a recently approved Recommendation. It will be replaced by the published version after editing. Therefore, there will be differences between this prepublication and the published version.

FOREWORD

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Recommendation ITU-T Y.2902, Carrier grade open environment components – Amendment 3

Annex C, The FTP server CGOE component

(This annex forms an integral part of this Recommendation)

Summary

This Annex specifies the FTP client CGOE component.

C.1 Scope

This Annex specifies the FTP client CGOE component.

C.2 References

The following ITU-T Recommendations and other references contain provisions, which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision; users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published.

The reference to a document within this Recommendation does not give it, as a stand-alone document, the status of a Recommendation.

[RFC 0854] IETF RFC (1983), *Telnet Protocol Specification*

[RFC 0855] IETF RFC (1983), *Telnet Option Specifications*

[RFC 0959] IETF RFC (1985), *File Transfer Protocol*

[RFC 2228] IETF RFC (1997), *FTP Security Extensions*

[RFC 2640] IETF RFC (1999), *Internationalization of the File Transfer Protocol*

[RFC 2773] IETF RFC (2000), *Encryption using KEA and SKIPJACK*

[RFC 3659] (2007), *Extensions to FTP*

C.3 Definitions

C.3.1 Terms defined elsewhere

This Recommendation uses the following terms defined elsewhere:

C.3.1.1 application [ITU-T Y.2901]: An application is a piece of software answering a set of user's requirements using telecommunication network services via an IT system.

C.3.1.2 carrier grade [ITU-T Y.2901]: Colloquially, a "carrier grade" implementation of a solution, building block, or a COTS component exhibits particular qualities beyond regular information technology (IT) reliability, availability, serviceability, and manageability (RASM) features enabling its mission-critical use in a service provider's offering.

NOTE – COTS component can be called "carrier grade" with respect to a particular building block if it meets all of the necessary and sufficient non-functional requirements of a COTS category for such a building block.

C.3.1.3 CGOE component [ITU-T Y.2901]: A CGOE component is an abstract description of technical tasks, interfaces and properties.

C.3.1.4 functional requirements [ITU-T Y.2901]: The set of interfaces, capabilities, and features, developed with respect to a service architecture associated with a building block.

C.3.1.5 middleware [ITU-TY.2901]: The mediating entity between two information elements. Such an element can be, for example, an application, infrastructure component, or another mediating entity.

C.3.1.6 non-functional requirements [Y.2901]: A list of features that a building block must provide in order to ensure certain behaviour within the service architecture.

NOTE: This list mostly represents requirements to allow for smooth operations and life cycle management.

C.3.2 This Recommendation defines the following terms:

None

C.4 Abbreviations

CGOE	Carrier Grade Open Environment
FTP	File Transfer Protocol
OAM&P	Operations, Administration, Maintenance and Provisioning
RASM	Reliability, availability, serviceability and manageability

C.5 Conventions

This Recommendation uses the CGOE component diagram conventions detailed in clause 5 of the main body of this Recommendation.

C.6 The FTP client CGOE component

C.6.1 General

A File Transfer Protocol (FTP) is a component that operates as an interface. It allows and is used 1) to promote sharing of files (computer programs and/or data), 2) to encourage indirect or implicit (via programs) use of remote computers, 3) to shield a user from variations in file storage systems among hosts, and 4) to transfer data reliably and efficiently. FTP, though usable directly by a user at a terminal, is designed mainly for use by programs. The security of FTP can be increased by the use of FTP security extensions.

The component FTP acts as a server, which provides a concrete communication facility.

A technology independent description is in Figure C.1.

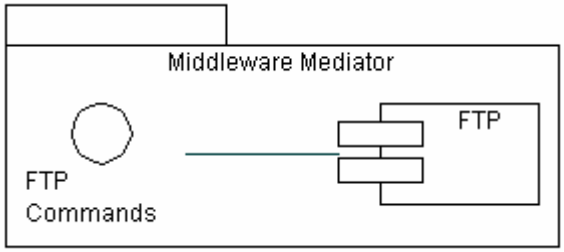

Figure C.1 - Technology independent view

This shows that FTP offers the capability for communication based on commands. This is the primary interface for a FTP component.

FTP has a Client-Server-Architecture. A principle description is in Figure C.2.

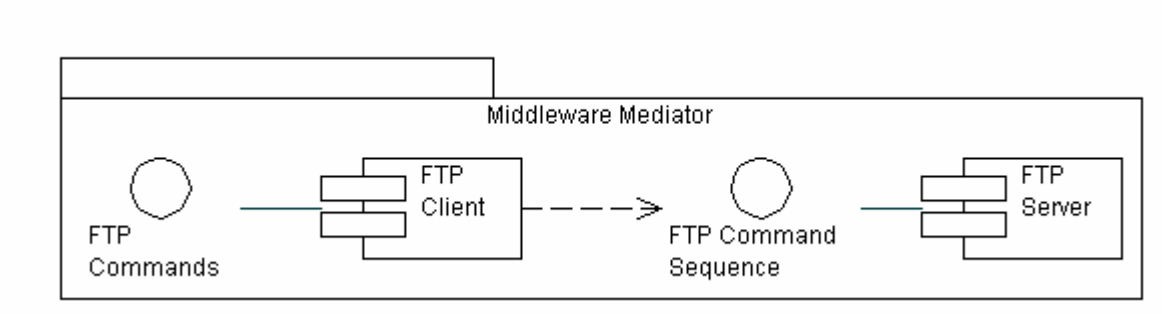

Figure C.2 - FTP Client-Server-Architecture

This Recommendation focuses on the client part of the FTP component. However most of the description holds also for the server part of the FTP component.

C.6.2 Relationship with other CGOE components

A CGOE compliant FTP client component makes use of other interfaces as shown in Figure C.3. These are secondary interfaces which are described in the CGOE documentation for each component. Each of these secondary interfaces will have one or more technology-specific instances.

The CGOE component FTP client is used by the CGOE component OAM&P middleware. FTP is an optional interface which may be present or not to the OAM&P middleware.

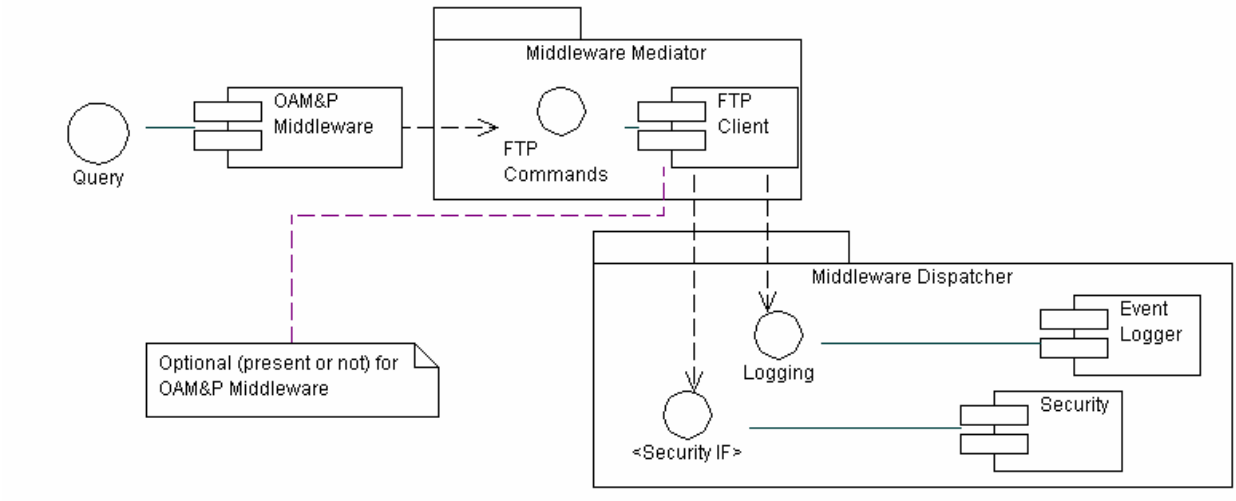

Figure C.3 - Secondary Interfaces

C.6.3 Internal functional properties

C.6.3.1 Data connection

A data connection is used to transfer files.

Standard

[RFC 959] updated by [RFC 2228], [RFC 2640], [RFC 2773]

C.6.3.2 Tracing

Tracing deals with monitoring communication traffic for the purpose of error finding

Standards

None

C.6.4 Non-functional properties

This sub-clause addresses non-functional properties which may be used to facilitate in the specification of non-functional requirements. However, non-functional requirements are outside the scope of this Recommendation.

C.6.4.1 Transaction performance

This property measures how many data can be transferred per second on a data connection.

Unit of measure: bytes/second

C.6.4.2 Modification of multitude data records

This property measures if a command of the interface operation supports modifying more than one data record.

Unit of measure: Yes/No

C.6.4.3 Recovery

This property measures the behaviour of the components if there is no response or confirmation e.g. due to a temporary outage.

Unit of measure: Yes/Partly/No

C.6.5 Interfaces

C.6.5.1 FTP client-IF-01 <FTP Commands>

Provides the communication commands.
NOTE: This also includes command sequences.

Standard

[RFC 959] updated by [RFC 2228], [RFC 2640], [RFC 2773]

C.6.5.2 FTP client-IF-02 <Logging>

Provides the capability to log any transaction in relation to the component FTP.

Standard

GAP (Possible solution the logging component of the specific middleware can be used)

C.6.5.3 FTP client-IF-03 <Security IF>

The <Security IF> is the interface to the component security. Security also includes access control to files and directories.

Standard

GAP

C.6.5.4 FTP client -IF-04 <Telnet>

The purpose of the TELNET Protocol is to provide a fairly general, bi-directional, eight-bit byte oriented communications facility. A TELNET connection is a Transmission Control Protocol (TCP) connection used to transmit data with interspersed TELNET control information.

Standard

IETF RFC 854

IETF RFC 855

C.6.5.5 FTP client-IF-05 <File System>

Provides the capability to create, delete, read, write and modify files and directories. This includes also access rights.

Standard

IETF RFC 854

IETF RFC 855

C.7 Security

Should security be required, consideration should be given to the use of the security extensions described in RFC 2228. These extensions may be used to provide strong authentication, integrity, and confidentiality on both the control and data channels.