

---

---

**Information technology — Cloud  
computing — Reference architecture**

*Technologies de l'information — Informatique en nuage — Architecture  
de référence*



**COPYRIGHT PROTECTED DOCUMENT**

© ISO/IEC 2014

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
Case postale 56 • CH-1211 Geneva 20  
Tel. + 41 22 749 01 11  
Fax + 41 22 749 09 47  
E-mail [copyright@iso.org](mailto:copyright@iso.org)  
Web [www.iso.org](http://www.iso.org)

Published in Switzerland

## CONTENTS

|   | <i>Page</i> |
|---|-------------|
| 1 Scope .....   | 1           |
| 2 Normative references.....   | 1           |
| 2.1 Identical Recommendations   International Standards .....                       | 1           |
| 2.2 Additional references .....   | 1           |
| 3 Definitions.....  | 1           |
| 3.1 Terms defined elsewhere.....  | 1           |
| 3.2 Terms defined in this Recommendation   International Standard.....              | 1           |
| 4 Abbreviations .....   | 2           |
| 5 Conventions.....  | 2           |
| 6 Cloud computing reference architecture goals and objectives.....                  | 3           |
| 7 Reference architecture concepts .....   | 4           |
| 7.1 CCRA architectural views.....   | 4           |
| 7.2 User view of cloud computing .....  | 5           |
| 7.3 Functional view of cloud computing.....   | 7           |
| 7.4 Relationship between the user view and the functional view.....                 | 8           |
| 7.5 Relationship of the user view and functional view to cross-cutting aspects..... | 8           |
| 7.6 Implementation view of cloud computing.....                                     | 9           |
| 7.7 Deployment view of cloud computing .....  | 9           |
| 8 User view.....  | 9           |
| 8.1 Introduction to roles, sub-roles and cloud computing activities.....            | 9           |
| 8.2 Cloud service customer .....  | 10          |
| 8.3 Cloud service provider .....  | 14          |
| 8.4 Cloud service partner .....   | 21          |
| 8.5 Cross-cutting aspects.....  | 23          |
| 9 Functional view .....   | 29          |
| 9.1 Functional architecture.....  | 29          |
| 9.2 Functional components .....   | 30          |
| 10 Relationship between the user view and the functional view.....                  | 38          |
| 10.1 General.....   | 38          |
| 10.2 Overview .....   | 38          |
| Annex A – Further details regarding the user view and functional view.....          | 44          |
| A.1 The cloud service customer–cloud service provider relationship.....             | 44          |
| A.2 The provider–peer provider (or "inter-cloud") relationship .....                | 47          |
| A.3 The cloud service developer–cloud service provider relationship.....            | 50          |
| A.4 The cloud service provider–Auditor relationship.....                            | 51          |
| Bibliography .....  | 53          |