(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
15 December 2011 (15.12.2011)

PCT

(10) International Publication Number
WO 2011/156738 A3

(51) International Patent Classification:
G06F 9/22 (2006.01) *G06F 9/06* (2006.01)

(21) International Application Number:
PCT/US2011/040020

(22) International Filing Date:
10 June 2011 (10.06.2011)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
12/814,246 11 June 2010 (11.06.2010) US

(71) Applicant *(for all designated States except US)*: **INTEL CORPORATION** [US/US]; 2200 Mission College Boulevard, Santa Clara, California 95052 (US).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **SAKTHIKUMAR, Palsamy** [IN/US]; 11703 138th Street Ct. E., Puyallup, Washington 98374 (US). **SWANSON, Robert C.** [US/US]; 7142 Grayhawk Lane NE, Olympia, Washington 98516 (US). **ZIMMER, Vincent J.** [US/US]; 1937 S. 369th Street, Federal Way, Washington 98003 (US). **ROTHMAN, Michael A.** [US/US]; 11905 183rd Street East, Puyallup, Washington 98374 (US). **BULUSU, Mallik** [IN/US]; 3243 Lady Fern Lp NW, Olympia, Washington 98502 (US).

(74) Agents: **VINCENT, Lester J.** et al.; Blakely Sokoloff Taylor & Zafman, 1279 Oakmead Parkway, Sunnyvale, California 94085 (US).

(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— *with international search report (Art. 21(3))*

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

(88) Date of publication of the international search report:
5 April 2012

(54) Title: MULTI-OWNER DEPLOYMENT OF FIRMWARE IMAGES

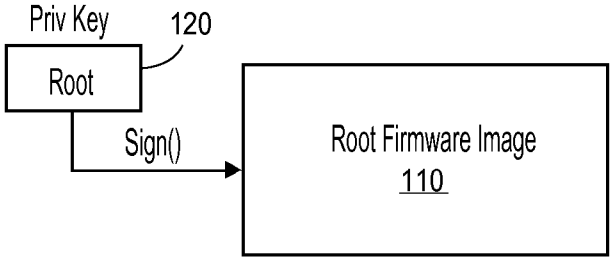

FIG. 1
(PRIOR ART)

(57) Abstract: A method, apparatus, system, and computer program product for multi-owner deployment of firmware images. The method includes obtaining a signed firmware image that comprises a first code module signed by a first code owner and a second code module signed by a second code owner. The method further includes obtaining an updated first code module comprising updated code for the first code module, verifying that the updated first code module is signed by the first code owner, and updating the signed firmware image with the updated first code module in response to verifying that the updated first code module is signed by the first code owner. The signed firmware image may further comprise an access control list that authorizes updates to the first code module by the first code owner and updates to the second code module by the second code owner.

WO 2011/156738 A3