



(51) International Patent Classification:

G06F 9/48 (2006.01) G06F 9/455 (2018.01)
G06F 13/24 (2006.01)

(21) International Application Number:

PCT/EP2020/052542

(22) International Filing Date:

03 February 2020 (03.02.2020)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

19157104.1 14 February 2019 (14.02.2019) EP

(71) Applicant: **INTERNATIONAL BUSINESS MACHINES CORPORATION** [US/US]; New Orchard Road, Armonk, New York 10504 (US).(71) Applicant (for MG only): **IBM DEUTSCHLAND GMBH** [DE/DE]; c/o IBM Deutschland Management & Business Support GmbH, Patentwesen und Urheberrecht, IBM Allee 1, 71139 Ehningen (DE).(72) Inventors: **RAISCH, Christoph**; c/o IBM Deutschland Research & Development GmbH, Schoenaicher Strasse 220, 71032 Boeblingen (DE). **KRAEMER, Marco**; c/o IBM Deutschland Research & Development GmbH,

Schoenaicher Strasse 220, 71032 Boeblingen (DE). **NERZ, Bernd**; c/o IBM Deutschland Research & Development GmbH, Schoenaicher Strasse 220, 71032 Boeblingen (DE). **SCHMIDT, Donald**; c/o IBM Corp., 2455 South Road, Poughkeepsie, New York 12601 (US). **DRIEVER, Peter**; c/o IBM Corp., 2455 South Road, Poughkeepsie, New York 12601 (US).

(74) Agent: **DOEHLER, Denis**; c/o IBM Deutschland Management & Business Support GmbH, Patentwesen und Urheberrecht, IBM Allee 1, 71139 Ehningen (DE).

(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, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, 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, RW, SD, SL, ST, SZ, TZ,

(54) Title: INTERRUPT SIGNALING FOR DIRECTED INTERRUPT VIRTUALIZATION

(57) **Abstract:** The invention relates to a method for providing an interrupt signal to a guest operating system. A bus attachment device receives an interrupt signal from a bus connected module with an interrupt target ID identifying a processor assigned for use by the guest operating system as a target processor for handling the interrupt signal. The bus attachment device forwards the interrupt signal to the target processor for handling. A translation of the interrupt target ID to a logical processor ID of the target processor is used to address the target processor directly. In addition, the bus attachment device updates a directed interrupt signal indicator of a directed interrupt signal vector assigned to the target processor in order to indicate that there is an interrupt signal addressed to the respective interrupt target ID to be handled.

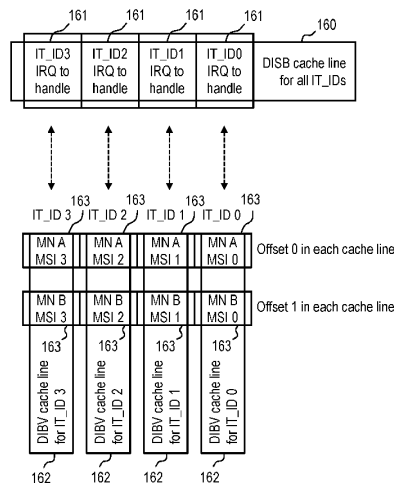


FIG. 3

UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, 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, KM, ML, MR, NE, SN, TD, TG).

Published:

- *with international search report (Art. 21(3))*
- *in black and white; the international application as filed contained color or greyscale and is available for download from PATENTSCOPE*