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**(54) Title (EN):** FABRIC CONTROL PROTOCOL FOR DATA CENTER NETWORKS WITH PACKET SPRAYING OVER MULTIPLE ALTERNATE DATA PATHS

**(54) Title (FR):** PROTOCOLE DE COMMANDE DE TISSU POUR RÉSEAUX DE CENTRE DE DONNÉES AVEC PULVÉRISATION DE PAQUETS SUR DE MULTIPLES TRAJETS DE DONNÉES ALTERNATIFS

**(57) Abstract:**

**(EN):** A fabric control protocol is described for use within a data center in which a switch fabric provides full mesh interconnectivity such that any of the servers may communicate packet data for a given packet flow to any other of the servers using any of a number of parallel data paths within the data center switch fabric. The fabric control protocol enables spraying of individual packets for a given packet flow across some or all of the multiple parallel data paths in the data center switch fabric and, optionally, reordering of the packets for delivery to the destination. The fabric control protocol may provide end-to-end bandwidth scaling and flow fairness within a single tunnel based on endpoint-controlled requests and grants for flows. In some examples, the fabric control protocol packet structure is carried over an underlying protocol, such as the User Datagram Protocol (UDP).

**(FR):** L'invention concerne un protocole de commande de tissu qui est utilisé dans un centre de données dans lequel un tissu de commutation fournit une interconnectivité de maillage complet de telle sorte que l'un quelconque des serveurs peut communiquer des données de paquet pour un flux de paquets donné à n'importe quel autre serveur à l'aide d'un quelconque trajet parmi un certain nombre de trajets de données parallèles à l'intérieur du tissu de commutation de centre de données. Le protocole de commande de

tissu permet la pulvérisation de paquets individuels pour un flux de paquets donné à travers une partie ou la totalité des multiples trajets de données parallèles dans le tissu de commutation de centre de données et, facultativement, le réordonnement des paquets pour une distribution vers la destination. Le protocole de commande de tissu peut fournir une mise à l'échelle de bande passante de bout en bout et une équité de flux dans un seul tunnel sur la base de requêtes et d'autorisations commandées par point d'extrémité pour des flux. Dans certains exemples, la structure de paquet de protocole de commande de tissu est prise en charge par un protocole sous-jacent, tel que le protocole de datagramme utilisateur (UDP).

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European Patent Office (EPO) : 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

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Eurasian Patent Organization (EAPO) : AM, AZ, BY, KG, KZ, RU, TJ, TM

### **Declarations:**

Declaration made as applicant's entitlement, as at the international filing date, to apply for and be granted a patent (Rules 4.17(ii) and 51bis.1(a)(ii)), in a case where the declaration under Rule 4.17(iv) is not appropriate

Declaration made as applicant's entitlement, as at the international filing date, to claim the priority of the earlier application, where the applicant is not the applicant who filed the earlier application or where the applicant's name has changed since the filing of the earlier application (Rules 4.17(iii) and 51bis.1(a)(iii))