DEVELOPMENT OF A NEW SECURITY FRAMEWORK FOR BRING YOUR OWN DEVICE

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Abstract

Bring your own device (BYOD) concept is a recent and growing trend in most organizations, where employees are allowed to access the organization's network using their own devices. It has important features which provide convenience and ease of use to employees, while the organizations allow their employees to be as productive as possible. On the other hand, organizations may save the costs of purchasing and maintaining such assets. However, allowing personal mobile devices to access the organization network may carry security risks in the organizations and increase the chances of cyber attacks. It is difficult to trust these devices with access to specific proprietary information. Although many researchers have developed several models for security policies for BYOD, these policies adopted in most organizations are vague and generally immature. Thus, this research proposes the security framework for BYOD as a solution that enhances the security in organization without compromising the usability and flexibility of the system. The methods used in this research are systematic literature review and qualitative research approach. Systematic literature review method was chosen in this research to address the current state of security policies that is needed to secure BYOD. While the qualitative method is used to evaluate BYOD security framework. The proposed framework uses two layers of security controls which are device control and BYOD server. By this framework the organizations can reduce the emerging attacks of using mobile devices and increase the level of security.

Keywords: Bring Your Own Device, Security Policy, Access Control.

Abstrak

Konsep membawa peranti sendiri (BYOD) adalah satu trend terbaru dan sedang berkembang di kebanyakan organisasi, di mana pekerja dibenarkan untuk mengakses rangkaian di organisasi menggunakan peranti mereka sendiri. Ia mempunyai ciri-ciri penting yang memberikan kemudahan kepada penggunaan, manakala organisasi pekerja boleh menjadi lebih produktif. Sebaliknya, organisasi boleh menjimatkan kos pembelian peralatan dan mengekalkan aset tersebut. Walau bagaimanapun, mengakses rangkaian menggunakan peranti mudah alih peribadi di dalam organisasi boleh membawa risiko keselamatan dan meningkatkan peluang serangan siber. Oleh sebab itu, ini amatlah sukar untuk mempercayai peranti peribadi untuk mengakses maklumat proprietari tertentu. Walaupun banyak kajian terhadap dasar keselamatan untuk BYOD, dasar-dasar yang diterima pakai di kebanyakan organisasi adalah tidak jelas dan secara amnya tidak matang. Oleh itu, kajian ini mencadangkan rangka kerja keselamatan untuk BYOD sebagai penyelesaian untuk meningkatkan keselamatan dalam organisasi tanpa menjejaskan kebolehgunaan dan fleksibiliti sistem. Kaedah yang digunakan dalam kajian ini ialah kajian literatur yang sistematik dan pendekatan penyelidikan secara kualitatif. Kaedah kajian literatur secara sistematik (SLR) telah dipilih dalam kajian ini untuk menangani keadaan semasa dasar keselamatan yang diperlukan untuk menjamin keselamatan BYOD. Walau bagaimana pun kaedah kualitatif digunakan untuk menilai rangka kerja keselamatan BYOD berdasarkan SLR. Rangka kerja yang dicadangkan menggunakan dua lapisan kawalan keselamatan yang mengawal peranti dan pelayan BYOD. Dengan rangka kerja ini organisasi boleh mengurangkan serangan yang baru muncul dengan menggunakan peranti mudah alih dan meningkatkan tahap keselamatan.

Kata kunci: Bawa Peranti Anda Sendiri, Dasar Keselamatan, Kawalan Access.

ملخص البحث

مفهوم جلب الجهاز الخاص بك BYOD هو الاتجاه الحديث والمتنامي في اغلب المنظمات، حيث يسمح للموظفين للوصول الي شبكة الموسسة باستخدام اجهزتهم الخاصة. ولديه المميزات الهامة التي توفر الراحة وسهولة الاستخدام للموظفين، في حين تسمح المنظمات لموظفيها على أن تكون منتجة قدر الامكان. من ناحية اخرى، يمكن للمنظمات توفير تكاليف الشراء والحفاظ على هذه الاصول. ومع ذلك، السماح للاجهزة النقالة الشخصية للوصول الي شبكة المنظمة قد تحمل مخاطر أمنية في المنظمات وزيادة فرص الهجمات الالكترونية. فمن الصعب أن نثق في هذه الأجهزة مع امكانية الوصول الي المعلومات السرية المحددة. على الرغم من أن العديد من الابحاث نمذجت السياسات الامنية للBYOD الا ان السياسات المتبعة في معظم المنظمات غامضة وغير ناضجة بشكل عام. وبالتالي، يقترح هذا البحث الاطار الامني كحل يعزز الأمن في المؤسسات دون المساس بقابليتها للاستخدام ومرونة النظام. الاسلوب المستخدم في هذا البحث هو مراجعة منهجية الادبيات ومنهج البحث النوعي. وقد تم اختيار اسلوب مراجعة منهجية الادبيات في هذا البحث لمعالجة الوضع الحالي للسياسات الامنية التي نحتاجها لتامين BYOD. في حين ان الاسلوب النوعي استخدم لتقييم الاطار الامني لل BYOD. يستخدم الاطار المقترح طبقتين من الضوابط الامنية والتي هي تحكم الجهاز وخادم BYOD. من خلال هذا الاطار يمكن للمنظمات ان تقلل من الهجمات الناشئة من استخدام الأجهزة النقالة وزيادة مستوى الامن.

الكلمات البحثية: جلب الجهاز الخاص بك، السياسات الأمنية، التحكم في الوصول.

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