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Open Computing Platform: A Self-service Remote Access System for Computing Continuum

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Advanced computing infrastructures offer unparalleled computing capabilities and effectively support a multitude of computing requirements across diverse fields such as scientific research, big data analysis, artificial intelligence training and inference, and many more. Secure Shell (SSH) is a widely used method for accessing remote computing resources. To aim for efficient and secure access to computing resources, this paper proposed the establishment of an authentication chain consisting of a CSTNET Passport and an SSH lightweight certificate. To enhance security, the model restricts the time window, narrowing it from an unrestricted period to a specific time range designated by the user. The system changes access from anytime and anywhere to on-demand access with various restrictions specified by users, and also transfers controls from administrators to users. The experiments show that, the system is easy to deploy, occupies fewer resources, does not introduce extra hardware costs, and can effectively increase the usability and security of computing resource.

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