

EXPRESSSCOPEエンジン 3 ユーザーズガイド (ft サーバ)

**NEC Expressサーバ
Express5800シリーズ**

1章 リモートマネジメント機能の概要

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本書について

本書は、サーバーの EXPRESSSCOPE エンジン 3 機能を使用するための手引きです。

本機能を使用してサーバーの HW 管理/監視, リモートマネージメントを行う上で、疑問点や不具合があった場合にご利用ください。

また本書は必要なときにすぐ参照できるよう、お手元に置いておくようにしてください。

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用語

用語	解説
Active Directory	Microsoft 社のディレクトリサービスです。
BMC	Baseboard Management Controller サーバーに搭載されている、システムの状態や OS に依存することなく、システムのハードウェアの監視機能を提供する IPMI 仕様に準拠した管理用コントローラーです。標準でマザーボード上に組み込まれています。
ESMPRO/Server Manager	管理 PC に導入するサーバー管理用ソフトウェアです。
EXPRESSSCOPE エンジン 3	2011年度以降に出荷されたサーバーから搭載が始まった Express5800サーバー向けの管理用コントローラーです。IPMI に準拠したBMCの機能を包含しており、さまざまな機能を提供します。
FRU	Field Replaceable Unit IPMI 仕様にて規定された保守交換部品情報です。
IPMI	Intelligent Platform Management Interface システムの状態や OS に依存することなく、サーバーのハードウェアを監視するための標準インターフェース仕様です。
LDAP	Lightweight Directory Access Protocol ディレクトリサービスに接続するためのプロトコルです。
SEL	System Event Log IPMI 仕様にて規定されたハードウェアログ情報です。
SDR	Sensor Data Record IPMI 仕様にて規定されたセンサー情報です。
SNMP	Simple Network Management Protocol ネットワーク機器やコンピューター等を監視/制御するためのプロトコルです。EXPRESSSCOPEエンジン3では、IPMI仕様に準拠したSNMP通報機能のみ使用します。
SSH	Secure Shell 通信が暗号化されるセキュアなコマンドラインプロトコルです。
RA	Router Advertisement IPv6 アドレスを自動的に割り振るための仕組みのひとつです。
アクセスログ	EXPRESSSCOPE エンジン 3 に対して行ったログイン/ログアウトや操作を記録する機能です。
リモート KVM	Remote Keyboard Video Mouse サーバー上のビデオ出力およびキーボード/マウス入力を管理PC上で仮想的に実現する機能です。
リモートメディア	管理 PC 上に接続した USB メモリ、CD/DVD ROM、FD 等の各種メディアをサーバー上で仮想的に認識させる機能です。
管理 PC	遠隔地からネットワーク経由でサーバーを運用管理するPC相当の端末を指します。

本文中の記号について

本書では、以下の4種類の記号を使用しています。これらの記号と意味をご理解になり、本機能を正しくご使用ください。



本製品の取り扱いや、操作で守らなければならない事柄や特に注意すべき点を示します。



本製品やソフトウェアを操作する上で確認をしておく必要がある点を示します。



知っておくと役に立つ情報や、便利なことなどを示します。



発生したトラブルの事例を示します。

はじめに

本製品に搭載されたEXPRESSSCOPEエンジン 3を使用することで、サーバー内の電源、ファン、温度等サーバーの状態の監視や、管理用ネットワークによるリモートからのキーボード、ビデオ、マウス (KVM) 制御、サーバーから遠隔地のCD・DVD-ROM/フロッピーディスクドライブ/ISOイメージ/USBメモリにアクセスするなど、遠隔地からサーバーの制御が可能となります。EXPRESSSCOPEエンジン 3はシステム管理用LSIであるBMC (Baseboard Management Controller) を用いて実現されています。以後、本書ではEXPRESSSCOPEエンジン 3のことをBMCと記載します。

本書は本機能を正しく使用できるようにするための手引きです。本書に記載されている内容を良く理解された上で本機能を正しく、確実に操作してください。

1. リモートマネジメント機能の概要

本装置は、システム管理用 LSI である BMC (Baseboard Management Controller) と BMC 専用の管理用 LAN ポートを標準で搭載しております。管理用 LAN ポートをネットワークに接続することにより、遠隔地から Web ブラウザや SSH クライアントを使用して BMC 経由でのサーバーの管理が可能となります。

また、リモートデバイス機能を使用することにより、遠隔地から本装置のキーボード・ビデオ・マウス (KVM) の操作や、遠隔地の CD・DVD-ROM/フロッピーディスクドライブ/ISO イメージ/USB メモリに本装置からアクセスすることが可能となります (リモート KVM/メディア)。

2. サーバー側の設定

本章では本機能をサーバーで使用するにあたり、搭載するサーバー側で実施しなければならない内容について説明します。

ネットワーク デフォルト設定値

本装置をネットワークに接続する場合のデフォルト設定値を以下に記載します。

IP アドレス	:192.168.1.1
ユーザ名	:Administrator
パスワード	:Administrator

- ★ DHCP サーバーを使用せずに接続する場合は、上記デフォルトの IP アドレス “192.168.1.1” が使用可能なローカルなネットワーク内で、このアドレスにアクセスしてください。デフォルトで設定されている IP アドレス “192.168.1.1” が使用できない環境では、サーバーにて Off-line Tool の BMC Configuration を利用して、マネジメント用 LAN の IP アドレスを設定してください。設定方法については「BMC のネットワーク設定」を参照してください。



セキュリティ上の理由から、お客さまの環境に合わせたユーザ名・パスワード・IP アドレスに設定し直してください。

設定方法に関しましては、5章「リモートマネジメントの使い方」を参照願います。

- ★ 出荷時のデフォルト設定ではリモートマネジメント機能が有効化されています。（サーバーによってはデフォルト設定で無効化されている場合があります。）このため、本機能をお使いにならない場合には、Off-line Tool の BMC Configuration を利用して、設定を無効にしてください。設定方法については「BMC のネットワーク設定」を参照してください。

BMC のネットワーク設定

Web サーバ機能を利用したリモートマネージメント機能や、コマンドラインインタフェースを使用するために必要な、BMC のネットワーク設定を次のツールから行うことができます。

- Web ブラウザ
詳細は 5 章を参照してください。
- BMC Configuration (Off-line)
サーバーの電源 ON または再起動後の、ロゴ画面または POST (Power On Self Test) 画面表示中に F4 キーを押して、Off-line Tool の BMC Configuration を起動します。
- BMC Configuration Tool (On-line Windows/Linux)
サーバー添付の EXPRESSBUILDER からインストール可能です。

それぞれのツールによって設定できる項目が異なります。設定項目の詳細は各ツールのヘルプを参照してください。

設定項目	Web ブラウザ	Off-line BMC Configuration	On-line BMC Configuration Tool (Windows/Linux)
BMC のネットワーク設定 運用 LAN とマネージメント専用 LAN ポートの切り替え	×	×	×
IP アドレス サブネットマスク デフォルトゲートウェイ DHCP 有効/無効 IPv6 アドレス割り当てモード IPv6 リンクローカルアドレス IPv6 静的アドレス IPv6 プリフィックス長 IPv6 グローバルアドレス IPv6 ゲートウェイアドレス IPv6 DNS サーバアドレス	×	○	○
サービス設定 HTTP/HTTPS/SSH	×	○	○
BMC Initialization	×	○	○

Management LAN / Shared BMC LAN

BMC がサーバーの運用 LAN を使用する機能のことを Shared BMC LAN といいます。
BMC のネットワークとしてマネージメント専用 LAN を使用する場合は「Disabled」、サーバー LAN ポートを共有して使う場合は、「Enabled」を選択します。「Enabled」に設定した場合、マネージメント専用 LAN ポートは使用できません。(サーバーによって、本メニューは、サポートしていない場合があります。詳細はサーバーのユーザーズガイドを参照してください。デフォルトは「Disabled」です。)
但し、ft サーバでは Shared BMC LAN は未サポートになります

Connection Type

使用するリンク速度とデュプレックスモードを設定してください。

Management LAN の場合、以下の選択が可能です。

- Auto Negotiation
- 100Mbps Full Duplex
- 100Mbps Half Duplex
- 10Mbps Full Duplex
- 10Mbps Half Duplex



- 接続先 (HUB 等) の設定がオートネゴシエーション (Auto Negotiation) の場合は、管理用 LAN の設定もオートネゴシエーション設定で使うようにしてください。接続先の設定をオートネゴシエーション設定以外の設定にする場合は、接続先の設定を行った後で管理用 LAN を同じ設定にしてください。Connection Type で選択可能な項目はサーバーおよび構成によって異なります。

IP Address

DHCP による自動取得を行わない場合には、BMC の IP アドレスを入力して下さい。

DHCP で自動取得を行う場合は、自動取得した IP アドレスが表示されます。

(IPv4 アドレスのデフォルトは 192.168.1.1 です。IPv6 アドレスのデフォルトはリンクローカルアドレス (*2) で、グローバルアドレスは設定されていません。)

Subnet Mask

DHCP による自動取得を行わない場合には、管理用 LAN のサブネットマスクを入力して下さい。

DHCP で自動取得を行う場合は、自動取得したサブネットマスクが表示されます。

(デフォルトは 255.255.255.0 です。)

Default Gateway

DHCP による自動取得を行わない場合には、管理用 LAN のデフォルトゲートウェイを入力して下さい。

DHCP で自動取得を行う場合は、自動取得したデフォルトゲートウェイが表示されます。(デフォルトは 0.0.0.0 です。)

DHCP

DHCP による IP アドレス等の自動取得を行う場合には「Enabled」、自動取得を行わない場合には「Disabled」を選択します。(デフォルトは「Disabled」(*1) です。)

IPv6 アドレス割り当てモード

静的割り当てか、動的割り当てを選択します。(デフォルトは「動的」です。)

IPv6 リンクローカルアドレス

BMC の IPv6 リンクローカルアドレスを表示します。

IPv6 静的アドレス

IPv6 アドレス割り当てモードが「静的」の場合に表示され、静的アドレスを設定します。

IPv6 プリフィックス長

IPv6 プリフィックス長を設定します。(デフォルトは「64」です。)

IPv6 グローバルアドレス

IPv6 アドレス割り当てモードが「動的」の場合に表示され、RA(Router Advertisement)で付与される IPv6 グローバルアドレスを表示します。

IPv6 ゲートウェイアドレス

IPv6 アドレス割り当てモードが「静的」の場合に表示され、IPv6 ゲートウェイアドレスを設定します。(デフォルトは「0::0」です。)

IPv6 DNS サーバアドレス

IPv6 アドレス割り当てモードが「静的」の場合に表示され、IPv6 DNS サーバアドレスを設定します。(デフォルトは「0::0」です。)

Web Interface

HTTP

HTTP を使用した BMC Web サーバ機能を使用する場合には「Enabled」、使用しない場合には「Disabled」を選択します。HTTPS を使用せず、HTTP のみを「Enabled」にすることはできません(デフォルトは「Enabled」(*1)です。)

HTTP Port Number

HTTP 接続で使用する TCP のポート番号を変更することができます。(デフォルトは 80 です。)

HTTPS

HTTPS(SSL)を使用した BMC の Web サーバ機能を使用する場合は「Enabled」、使用しない場合は「Disabled」を選択します。(デフォルトは「Enabled」(*1)です。)

HTTPS Port Number

HTTPS(SSL)接続で使用する TCP のポート番号を変更することができます。(デフォルトは 443 です。)

Command Line Interface

SSH

SSH を使用した BMC のコマンドラインインタフェースを使用する場合は「Enabled」、使用しない場合は「Disabled」を選択します。(デフォルトは「Enabled」(*1)です。)

SSH Port Number

SSH 接続のポート番号を変更することができます。(デフォルトは 22 です。)

BMC Initialization

本メニューで、BMC の設定値を初期化できます。Web ブラウザからログインする際のログイン名／パスワード等をお忘れになった場合に本機能をご使用ください。BMC の設定値を初期化する場合は、「Enter」を押下すると表示される確認画面で、「YES」を選択してください。本メニューは「YES」を選択時に初期化を実行します。



- BMC の管理用 LAN 関連の本設定については BIOS セットアップユーティリティの Load Setup Defaults を実行してもデフォルトに戻りません。(デフォルトに戻すには BMC Initialization を実行してください)。
- BMC Initialization を実行すると両モジュールの BMC がリセットされます。実行後、初期化が完了するまでには、約 3 分程度かかります。初期化中は、システムのシャットダウンやリブート、また各種スイッチ操作は行わないようにご注意ください。



サーバーにバンドルされております管理ソフト ESMPRO/ServerManager をご使用の場合は、ESMPRO/ServerManager で設定された項目も BMC Initialization の操作にてクリアされます。ESMPRO/ServerManager をご使用の場合には、本操作を行う前に ESMPRO/ServerManager の設定情報のバックアップを行ってください。

*1 DHCP, HTTP, HTTPS, SSH に関しては、サーバーによっては、デフォルト設定が異なっている場合があります。

*2 BMC のネットワークインターフェースに付与されるアドレスで、1 つのリンク (サブネット) 内で一意になるように自動生成されます (FE80::/64)。IPv6 設定が無効でも常に付与されます。

IPv6 では、IP アドレスの設定方法として手動と RA (Router Advertisement) をサポートしますが、DHCP サーバーはサポートしません。また、IPv6 で利用できるユーザーインターフェースは、Web ブラウザーからの接続、コマンドラインインターフェースからの接続のみです。IPv4/IPv6 で利用可能な機能の詳細は以下です。

機能項目		IPv4	IPv6
Web サーバー機能での接続	DNS サーバー	○	○
	DHCP サーバー	○	×
	Active Directory	○	×
	LDAP	○	×
	メール通報	○	○
	SNMP 通報	○	×
	リモート KVM/メディア	○	○
	アクセスログ	○	○
コマンドラインインターフェース (SSH) での接続		○	○
WS-Management プロトコルでの接続		○	×

3. 管理 PC 側の設定

本章では本機能が搭載されたサーバーとの接続を行うにあたり、管理 PC 側で考慮しなければならない内容について説明します。

ブラウザの設定

以下の設定を行ってください。

- JavaScript の実行を許可してください。
- Java の実行を許可してください。
- Cookie の利用を許可してください。
- ポップアップを許可してください。
- スタイルシートを有効にしてください。
- HTTP1.1 設定を有効にしてください。

※Microsoft Internet Explorer か Microsoft Edge をご利用の場合、以下の設定が必要です。

Microsoft Edge の場合は、コントロール パネルの「インターネットオプション」から設定してください。

- BMC のアドレスを信頼済みサイトに登録してください。
- 信頼済みサイトのセキュリティレベルは「中」にしてください。
- セキュリティ強化の構成が有効の場合、信頼済みサイトに「about:blank」の登録が必要になる場合があります。
- [インターネットオプション]→[詳細設定]→[セキュリティ]から「暗号化されたページをディスクに保存しない」のチェックを外しておくことが必要になる場合があります。
- [インターネットオプション]→[詳細設定]→[マルチメディア]から「Web ページのアニメーションを再生する」のチェックを行なっておくことが必要になる場合があります。
- サーバーOS でブラウザを使用する場合、セキュリティ設定が強化されているため、一部のボタンが反応しなくなる場合があります。その場合、IE ESC の機能をオフにしておく必要がある場合があります。
- SSL3.0 の脆弱性問題 (CVE-2014-3566) の回避のため、[インターネットオプション]→[詳細設定]から「SSL 3.0 を使用する」のチェックを外し、TLS1.0 以上を有効化してください。

※Mozilla Firefox (Linux OS のみサポート) をご利用の場合、以下の設定が必要です。

- URL に“about:config”を入力して
“network.http.max-persistent-connections-per-server”の値を 4 に変更しておくことが必要です。
- IPMI 情報表示 (SEL、SDR、FRU、MC、バックアップ) のウィンドウが表示されず、Java Plug-in がクラッシュする場合、“network.http.max-persistent-connections-per-server”の値を 1 に変更しておくことで改善されます。
- SSL3.0 の脆弱性問題 (CVE-2014-3566) の回避のため、URL に“about:config”を入力して ESR31 以降の場合、“security.tls.version.min”の値を“1”に変更する。
上記の設定を行い、ブラウザの SSL3.0 設定を無効化してください。

動作対応ブラウザ

Windows 7、Windows 8、Windows 8.1、Windows10、Windows Server 2008 R2 (SP1)、Windows Server 2012、Windows Server 2012 R2、および Windows Server 2016 上の以下のブラウザで動作します。

- Microsoft Internet Explorer 10.0
- Microsoft Internet Explorer 11.0
- Microsoft Edge

Red Hat Enterprise Linux WS (version 6.9 以上または 7.0 以上)、Red Hat Enterprise Linux Client (version 6.9 以上または 7.0 以上) 上の以下のブラウザで動作します。

- Firefox ESR 52

※ブラウザは最新のサービスパック及びセキュリティパッチを適用した環境でご利用になることをお勧めします。

※Microsoft 社の Internet Explorer サポートポリシー変更により、各 Windows OS 上で利用可能な最新バージョンの Internet Explorer のみにポリシーが変更されます。ご使用頂ける Internet Explorer に関しては以下をご参照ください。

<https://www.microsoft.com/ja-jp/windows/lifecycle/iesupport/>

※Firefox の動作保証は ESR 版のみにになります。

Java Runtime Environment

Java Runtime Environment, Standard Edition 8.0 が必要です。

※脆弱性などの対策により Java Runtime がアップデートされる可能性がありますので、最新 Update 版のご利用をお勧めします。

Java コントロールパネルで以下の設定が必要です。

- EXPRESSSCOPE エンジン 3 の IP アドレス (HTTP/HTTPS) を [セキュリティ]-[例外サイト・リスト] に登録してください。
- [詳細]-[Java Plug-in] で [次世代の Java Plug-in を有効にする] のチェックは外さないでください。
- SSL 3.0 脆弱性問題 (CVE-2014-3566) の回避のため、[詳細]-[高度なセキュリティ設定] から [SSL 3.0 を使用する] のチェックを外し、TLS 1.0 以上のプロトコルにチェックを入れることをお勧めします。



一部のブラウザでタブ機能を使って複数の BMC Web を開いた場合、リモート KVM/メディア機能が正常にご使用頂けない場合があります。その場合、タブ機能はご使用にならず、ブラウザの別ウインドウを開いてご使用ください。



Java8 をご使用の場合、「このアプリケーションを実行すると、セキュリティ上のリスクが生じる可能性があります」というダイアログが表示される場合があります。その場合、「リスクを受け入れて、このアプリケーションを実行します」のチェックを入れて実行ボタンを押してください。



Java8 をご使用の場合、「安全でない可能性のあるコンポーネントの実行をブロックしますか」というダイアログが表示される場合があります。その場合、「ブロックしない」のボタンを押してください。または、Java コントロールパネルの「詳細」-「混合コード」の設定から”有効-警告を表示せずに、保護をかけて実行する”を選択してください。



Java8 をご使用の場合、証明書失効チェックのために署名付き Java アプレット/アプリケーションの起動が遅くなる場合があります。その場合、一度ブラウザを終了し、Java コントロールパネルの「詳細」-「署名付きコード証明書失効チェックを実行」で「チェックしない」を選択してから再度ブラウザを起動してログインし直してください。

4. ネットワーク環境

利用ポート番号

本機能では、以下のポートを使用しますので、ファイヤーウォールを設置されているネットワーク環境では、ファイヤーウォールでの対応が必要となります。

モジュール名	ポート番号	プロトコル	方向	モジュール名	ポート番号
リモートメディア (暗号化無効時)	不定(*1)	TCP	⇄	BMC	5120 (CD/DVD) 5122 (USB MEM) 5123 (FD) (*2)
リモートメディア (暗号化有効時)	不定(*1)	TCP	⇄	BMC	5124 (CD/DVD) 5126 (USB MEM) 5127 (FD) (*2)
Web ブラウザ (暗号化無効時)	不定(*1)	TCP	⇄	BMC	80(*3)
Web ブラウザ (暗号化有効時)	不定(*1)	TCP	⇄	BMC	443(*3)
リモート KVM (暗号化無効時)	不定(*1)	TCP	⇄	BMC	7578(*2)
リモート KVM (暗号化有効時)	不定(*1)	TCP	⇄	BMC	7582(*2)
SSH クライアント	不定(*1)	TCP	⇄	BMC	22(*3)
SMTP サーバ	25(*4)	TCP	⇄	BMC	不定
LDAP サーバ	389(*5)	TCP	⇄	BMC	不定
SNMP サーバ	162	UDP	⇄	BMC	不定

*1: OS/他の SW が未使用のポートを利用します。

*2: [設定]→[システム操作]で変更可能

*3: BMC Configuration Tool で変更可能

*4: BMC Configuration Tool で変更可能

*5: BMC Configuration Tool で変更可能



BMC は HTTP プロキシサーバ経由での接続をサポートしていません。



リモートマネジメント機能を快適にご使用頂くため、100BASE-TX 相当以上 (10Mbps 以上の帯域) でのネットワークのご利用を推奨しております。

5. リモートマネージメントの使い方

概要

BMC の Web サーバ機能を使用し、Web ブラウザからサーバサーバーの電源制御やリモート KVM コンソールがご利用いただけます。

本機能の一部は Java Application で実現しております。

詳細は、オンラインヘルプと合わせてご参照ください。

接続方法

管理 PC 上の Web ブラウザから下記の URL にアクセスしてください。

http://BMC_HostPort または https://BMC_HostPort



“BMC_HostPort” は、BMC の IP アドレスもしくはホスト名の後に、コロンと http, https のポート番号を加えたものです。(例: 192.168.1.1:80)
http のポート番号が 80、https のポート番号が 443 (デフォルト) の場合は、ポート番号は省略可能です。



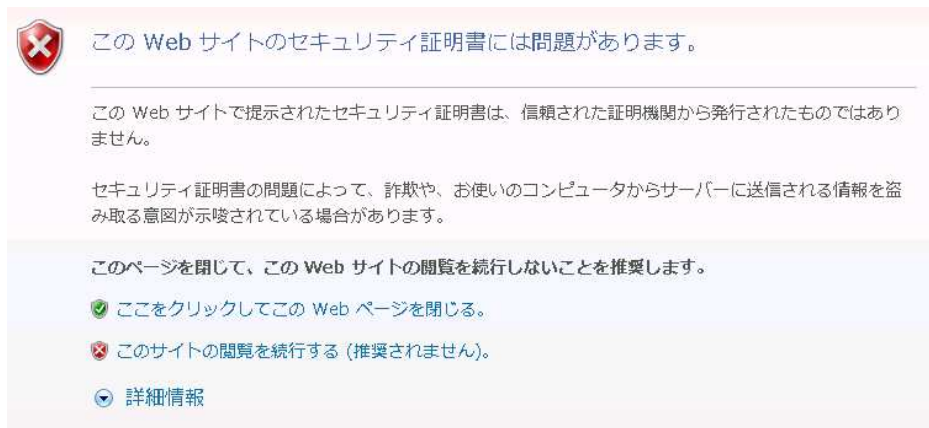
セキュリティのため、SSL を使用した https での接続を推奨します。
性能を重視される場合は、セキュリティが確保されたネットワークで、http での接続をご利用下さい。



SSL で接続を行った場合は、SSL のためのサーバ証明書に関する「セキュリティの警告」が表示される場合があります。

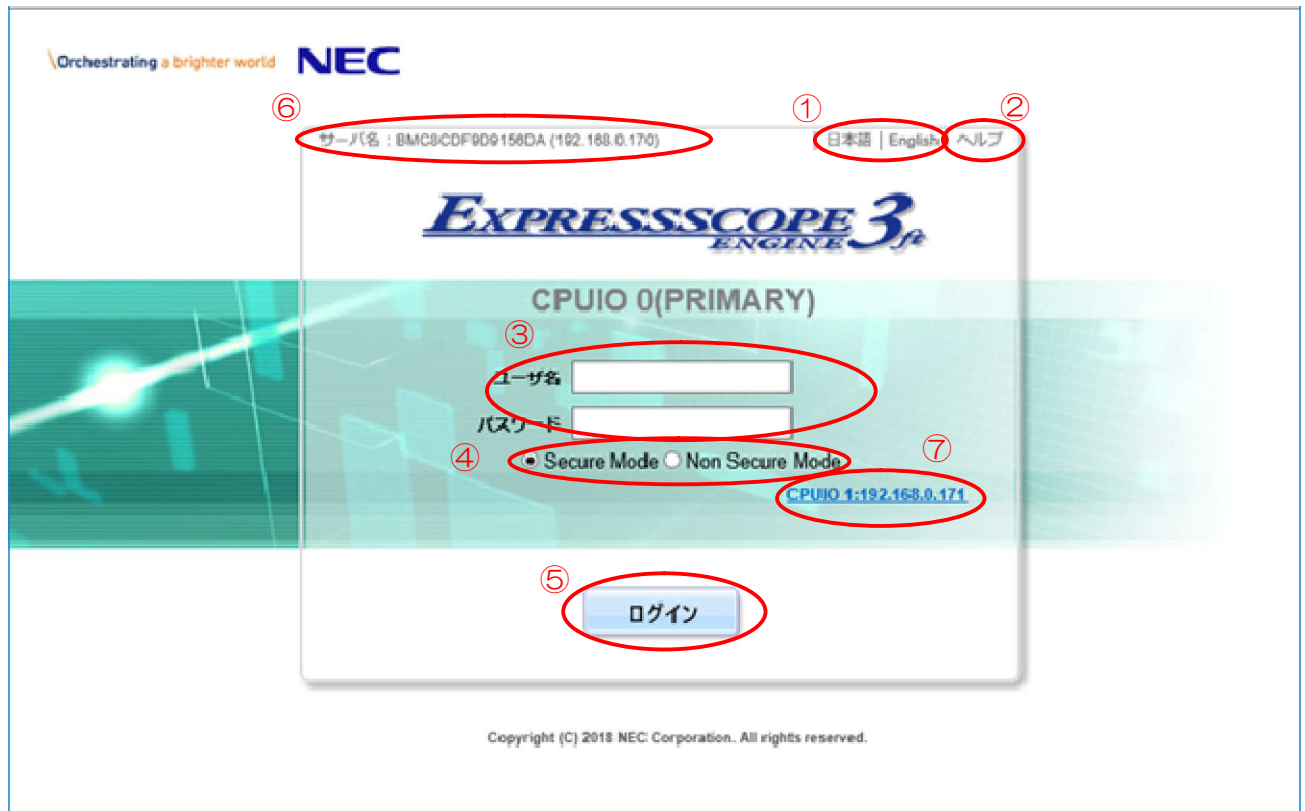


SSL のサーバ証明書を登録されていない場合には、HTTPS 接続の際に次のようなページが表示されて接続がブロックされますが、「このサイトの閲覧を続行する」を選択してください(表示は Internet Explorer をご利用の場合)。



ログイン・ログアウト

ログイン



- ① 表示言語を英語または日本語に切り替えることができます。
- ② オンラインヘルプを表示します。
- ③ ユーザ名とパスワードを入力します。
- ④ アクセスを Secure Mode (HTTPS) か Non Secure Mode (HTTP) で行うかを選択します。
- ⑤ 「ログイン」ボタンを押下してログインします。
- ⑥ サーバー名 (BMC の IP アドレス) を表示します
接続した CPU/IO モジュールの BMC が IPv6 アドレスを有効にしている場合 BMC の IP アドレスは IPv6 アドレスが表示されます。
- ⑦ 他系 CPU/IO モジュールの BMC の IP アドレスへのリンクを表示します。
このリンクは、他系 CPU/IO モジュールの BMC が IPv6 アドレスを有効にしている場合、IPv6 アドレスが表示されます。



表示言語の選択を行えるのはログインページのみです。ログイン後に表示言語を切り替える場合には、一度ログアウトを行って、ログインページで変更して下さい。



ログイン後はブラウザ機能の進む、戻る、及びリロードボタンは利用しないで下さい。



Active Directory 認証を使用してログインする場合は、ユーザ名の入力欄には、ユーザ名のみ入力してください。過去機種で必要だった”@ドメイン名”の入力は不要です。

ログアウト

画面右上の「ログアウト」をクリックすると、確認のダイアログが表示されます。ログアウトする場合には「OK」を選択してください。



ログアウトすると、ログインページに戻ります。

また、ログイン中に起動していたリモートデバイス機能などのウィンドウも閉じられます。



ログイン中にブラウザ動作が遅くなった場合、一度ブラウザの再起動、またはログアウトを行って下さい。



BMC が高負荷状態になった場合、復旧のために BMC の再起動が行われることがごく稀にあります。その場合、既存の接続は切断されますので、再度接続を行ってください。



正常にログアウトされないまま複数回ログインを続ける処理が行われた場合、ブラウザーとの既存の Web セッションが終了されず残ることで、Web 同時接続数に達してログインできなくなるか、または最大同時ログインユーザー数(4)に達し、ログインが出来なくなることがあります。その場合、前者の場合は1分程度待つてから、後者の場合は BMC の自動ログアウト時間(30 分)以上待つてから再度ログインを試してください。

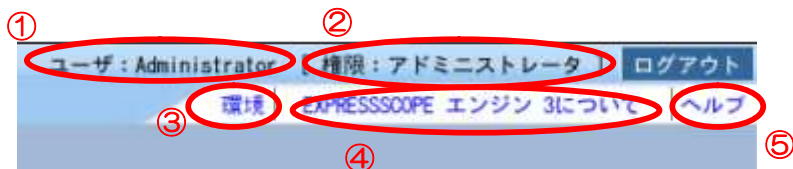


ネットワーク設定を変更後または、BMC リセット直後にログインに失敗することがあります。その場合、再度ログインを試してください。



ESMPRO/ServerManager から BMC の Web を開く際に BMC のログイン画面が表示される場合があります。その場合、そのままログインするか、再度 BMC の Web を開き直してお使いください。

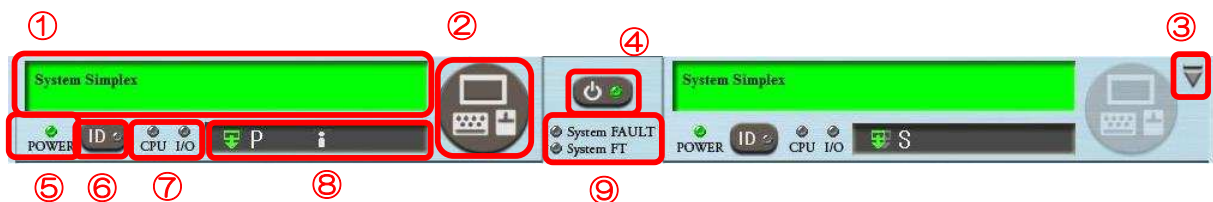
ヘッダーメニュー



- ① ログインユーザ名を表示します。
- ② ログインユーザの権限を表示します。
- ③ 「環境」をクリックすることにより、管理 PC の環境を表示、及び設定を行います。
- ④ クリックすることによりライセンス情報を表示します。
- ⑤ オンラインヘルプを表示します。

サーバパネル

ログイン後のブラウザ最下部には、サーバーの状態表示や電源制御・リモートデバイスの起動を行うことができる、サーバパネルが表示されています。



左側に CPU/I/O モジュール 0 のサーバパネルを表示し、右側に CPU/I/O モジュール 1 のサーバ

パネルを表示します。

- ① サーバーの状態を表す仮想 LCD です。
- ② リモート KVM/メディアを起動します。
- ③ サーバパネルの最小化ボタンです。
- ④ サーバーのパワースイッチとシステム POWER ランプです。サーバーの電源状態を示します。
- ⑤ CPU/I/O モジュールのモジュール POWER ランプです。
- ⑥ CPU/I/O モジュールの UID (Unit ID) スイッチと ID ランプです。
- ⑦ CPU/I/O モジュールの CPU FAULT ランプ、I/O FAULT ランプです。CPU/I/O モジュールの状態を示します。
- ⑧ CPU/I/O モジュールの SAFE TO PULL ランプの状態、プライマリランプの状態、BMC へのログイン状況やリモートメディア使用状況を表示します。
- ⑨ サーバーのシステム FAULT ランプ、システム FT ランプです。サーバーの状態を示します。

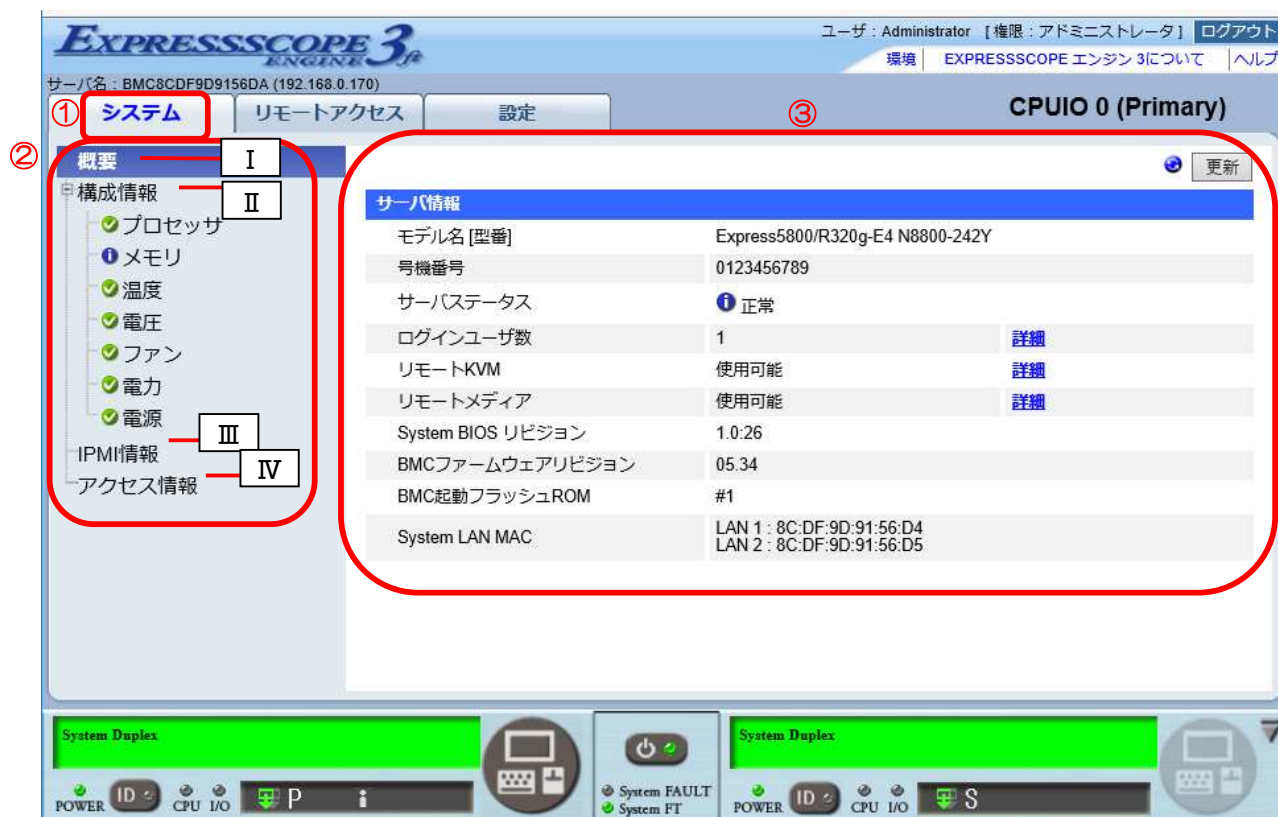


サーバーに UID ランプが搭載されていない場合でも仮想的な UID ランプとして表示します。



仮想 LCD の表示内容については、サーバーのメンテナンスガイドを参照してください。

システム



- ① BMC が提供する機能を表示します。以降、システムタブと表記します。
- ② システムタブで選択可能なメニューを表示します。
- ③ ②で選択された情報を表示します。上記の例では「概要」の画面を表示しています。

メニュー

I. 概要

サーバーの情報や BMC の状態の表示を行います。

II. 構成情報

サーバーに搭載されているコンポーネントやセンサの状態の確認を行ないます。構成情報の各項目（プロセッサ、メモリ、温度、電圧、ファン、電力、電源）に関して、サーバーでサポートしていない項目は表示されません。また、サーバーでサポートしている項目でも、システムの電源状態やデバイスなどの実装状態によって表示されない場合があります。

III. IPMI 情報

Launch Viewer ボタン押下により IPMI Information ビューアを起動し、IPMI に準拠した情報 (SEL, SDR, FRU, MC) の表示やバックアップを行います。保存したバックアップデータは、サーバ管理ソフトウェア (ESRAS ユーティリティ, ESMPRO/ServerManager) から参照することが出来ます。

IV. アクセス情報

BMC へのログインやログアウト等の操作ログの確認を行います。

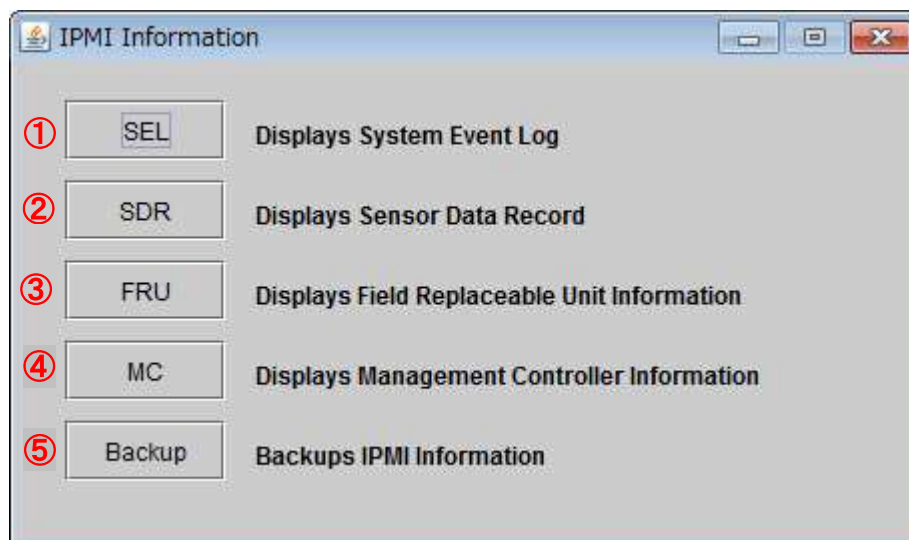


構成情報内の、「プロセッサ」「メモリ」を選択した場合に表示される情報について以下の注意事項があります。

CPU やメモリの情報がモジュール間で不一致になる場合があります。この場合、表示される情報が合わないだけで装置の動作には特に影響はありません。表示されている情報を更新する場合は以下の操作を実施してください。

- 情報を更新したい方の CPU/I/O モジュールをプライマリにする。
- 装置を電源オンして OS を起動するか、OS を再起動する。

IPMI Information ビューア



ボタン説明

- ① SEL ボタン
システムイベントログ画面を表示します。
- ② SDR ボタン
センサ装置情報画面を表示します。

③ FRU ボタン

保守交換部品画面を表示します。

④ MC ボタン

マネージメントコントローラ画面を表示します。

⑤ Backup ボタン

IPMI 情報バックアップダイアログ画面を表示します



サーバー側 OS によってハードウェアクロック (RTC) 設定が UTC オフセットで設定された場合、SEL (システムイベントログ) のタイムスタンプがローカルタイムスタンプではなく UTC オフセットでの時間になってしまうためにタイムゾーン分の時間差が発生しますのでご注意ください。



ブラウザーによっては、IPMI Information ビューアを起動する場合、「ipmiviewer.jnlp をダウンロードできませんでした」というダイアログが表示される場合があります。その場合、「再試行」を押して再度ダウンロードさせてください。



以下に示す画面は、EXPRESSSCOPE エンジン 3 からログアウトした後も表示されたまま残る画面になります。

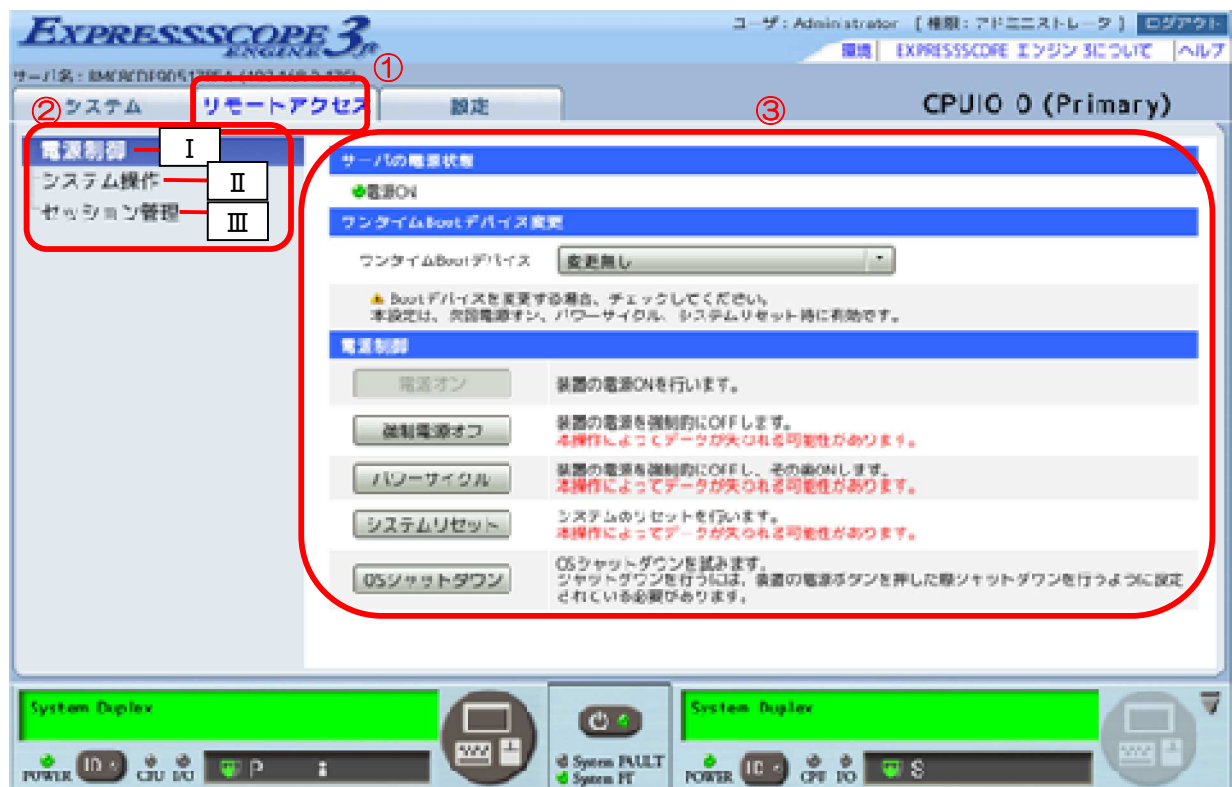
- ・ IPMI Information ビューア
- ・ システムイベントログ画面
- ・ センサ装置情報画面
- ・ 保守交換部品画面
- ・ マネージメントコントローラ画面
- ・ IPMI 情報バックアップダイアログ画面

画面が残った場合は、ウィンドウの閉じるボタン等で各画面を終了させてください。

また、EXPRESSSCOPE エンジン 3 からログアウトした後に、各画面の表示又は、再読み込みを行うと、エラーメッセージが表示されます。

この場合は一旦全ての画面を閉じた後に再度、EXPRESSSCOPE エンジン 3 にログインした状態で各操作を行ってください。

リモートアクセス



- ① BMC が提供する機能を表示します。以降、リモートアクセスタブと表記します。
- ② リモートアクセスタブで選択可能なメニューを表示します。
- ③ ②で選択された情報を表示します。上記の例では「電源制御」の画面を表示しています

メニュー

I. 電源制御

サーバーの Boot デバイスの変更や、電源オン/オフ、パワーサイクル、リセット、OS シャットダウンを行ないます。

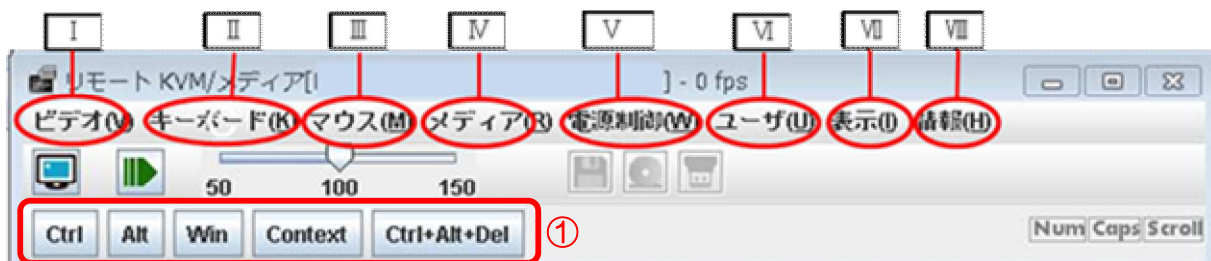
II. システム操作

リモート KVM/メディアの起動、UID ランプのオン/オフ、ダンプスイッチの押下を行います。

III. セッション管理

BMC にログインしているユーザの管理、切断を行います。

リモート KVM/メディア



- ① 特殊キー操作をサポートするためのホットキーです。Ctrl、Alt、Win、Context は、一度このホットキーをクリックすると、各キーが押下状態でロックされます。ロック状態を解除するには、再度ホットキーをクリックするか、管理 PC のキーボードの何れかのキーを押下してください。



ホットキーを押下状態でロックした場合、サーバーのキーボードではロック状態を解除できないため、そのまま放置してしまうと、サーバーのキーボードでは通常のキー操作が不可能となります。そのためホットキーをロック状態のまま放置しないようにしてください。

メニュー

I. ビデオ

画面リフレッシュ、ビデオバンド幅(低帯域)(ネットワーク帯域に応じた画面表示モードの変更として Normal、8bpp、8bpp モノクロ、16bpp の 4 つをサポート)、ビデオ手動録画、画面キャプチャ、全画面表示などの機能がご利用できます。

II. キーボード

ユーザー定義マクロ、日本語/英語/フランス語/ドイツ語に対応した仮想(ソフトウェア)キーボードなどの機能がご利用できます。

III. マウス

マウスカーソル表示の変更と同期、マウス座標モードの変更を行うことができます。

IV. メディア

リモートメディアの接続/切断を行うウィンドウを起動します。

V. 電源制御

サーバーの電源 ON/OFF、パワーサイクル、リセット、OS シャットダウン、NMI ダンプによるメモリダンプ(サーバーOS でメモリダンプ設定が行われている場合)を行なうことができます。

VI. ユーザ

リモート KVM/メディアを使用中のユーザー情報を表示します。リモート KVM/メディアは最大 2 ユーザーまでご利用出来ます。(*)

VII. 表示

ツールバー(コントロールボックスエリアとホットキーエリア)の表示制御を行います。ビデオ読み取りのみの権限で起動されているリモート KVM/メディアの場合はフルコントロールのメニューが表示され、フルコントロール権限をもつリモート KVM/メディアに対して権限譲渡の要求を行うことが出来ます。

VIII. 情報

バージョン情報を表示します。

(*) 複数リモート KVM コンソールをお使いでアクセス権を切り替える場合、一方のリモート KVM コンソールに一旦ビデオ読み取り専用のアクセス権を与えてからフルコントロールのアクセス権を与えることで安定した画面でご使用になれます。



重要

リモート KVM の画面上で管理 PC のキーボードから、[Shift]+[Alt]+[PrintScreen]の入力を行うと、リモート KVM の画面上とサーバーの画面上の両方で一部のキーが入力出来なくなる場合があります。この場合、以下のどちらかの方法で復旧させることができます。

- ・ 管理 PC のキーボードか、仮想キーボードの[Shift]キーを押下する
- ・ リモート KVM を一旦閉じてから再度リモート KVM を起動する



チェック

リモートメディアを接続するとシステム上で以下のデバイスが認識されます。

- AMI Remote FD
- AMI Remote CD/DVD
- AMI Remote USB Mem
- AMI Virtual Flash



チェック

管理 PC のフロッピーディスクドライブの種類によっては、接続後アクセスランプが点灯したままとなります。



重要

リモート KVM 起動中にサーバー側の解像度が頻繁に切り替るような操作が行なわれた場合、リモート KVM 接続が切断されてしまうことがごく稀にあります。その場合、再度リモート KVM を起動し直してください。



サーバーのローカルコンソールから、サーバー内の BMC に対してログインした場合、リモート KVM コンソールは絶対に開かないでください。キーボードやマウスの入力が不可能な状態になってしまいます。



ブラウザーによっては、リモート KVM/メディアを起動する場合、「jviewer.jnlp をダウンロードできませんでした」というダイアログが表示される場合があります。その場合、「再試行」を押して再度ダウンロードさせてください。



リモート KVM/メディアでマウス表示が正常に行われない場合、サーバー OS の以下の設定を試してください (Windows OS 種別によってはサポートされないメニューもありますのでご注意ください)。

–「ディスプレイ」–「画面の解像度」の「詳細設定」にある「トラブルシューティング」から「ハードウェア アクセラレータ」の設定を「最大」から 1 目盛り「なし」側に下げた設定にしてください。

–「マウスのプロパティ」の「ポインターオプション」にある「速度」の設定で、「ポインターの精度を高める」のチェックボックスを外してください。また、「表示」の設定で、「ポインターの軌跡を表示する」のチェックボックスをオンにしてください。



リモート KVM/メディアでユーザー定義マクロを追加した後にキーボード言語を変更する場合、言語によってキーコードが異なるキーがあるため、元のキーボード言語で作成したマクロは正常に動作しない場合があります。その場合、変更後のキーボード言語で再度マクロを作成し直してください。



ビデオバンド幅(低帯域)を 8bpp モノクロにした状態でビデオ手動録画を行うと、採取したビデオファイル(.avi)が Windows Media Player で再生出来ない場合があります。その場合、管理 PC に Motion JPEG コーデックを含むコーデックパックの追加を行うか、他の再生ソフトを試してください。



BIOS POST 動作処理中もしくは EXPRESSBUILDER 使用中に[設定]–[システム操作]からリモート KVM/メディアの設定変更を行わないでください。リモートデバイス (Internal Flash) がデタッチされて状態が不正な場合があります。



サーバーOS で Windows OS をお使いの場合、リモートメディア接続、もしくはイメージリダイレクション接続を行うと、以下のシステムイベントログが採取されることがあります。これについては、システム動作上問題ありません。

イベント ID: 1

イベントソース: VDS Basic Provider

イベントレベル: エラー

説明: 予期しないエラーが発生しました。エラーコード:32@01000004

設定



- ① BMC が提供する機能を表示します。以降、設定タブと表記します。
- ② 設定タブで選択可能なメニューを表示します。
- ③ ②で選択された情報を表示します。上記の例では「システム操作」の画面を表示しています。

メニュー

I. SSL

SSL サーバ証明書発行のための署名要求 (CSR) 作成と、認証機関から署名された SSL サーバ証明書の BMC へのアップロードを行います。

II. ユーザアカウント

BMC にログインできるユーザの作成、編集、削除や SSH の公開鍵の登録を行います。

III. システム操作

リモート KVM/メディアの設定を行います。

IV. その他

アクセスログの設定を行います。



“root”, “MWA”, “AccessByEM-Poem”, “eng” の各文字列は BMC によって予約されていますので、ユーザ名として追加および削除は行わないで下さい。ユーザーアカウントは IPMI のユーザーアカウントと同期する仕様となっております。IPMI コマンドツール等でユーザーを追加および削除する場合、User ID 6～16 までをご使用になれます。



アドミニストレータ権限のユーザーであるユーザー名 “Administrator” 以外にアドミニストレータ権限のユーザーがいない状態では “Administrator” の削除は行わないでください。削除してログアウトした場合、アドミニストレータ権限のユーザーがいなくなるため、ユーザーの新規追加が出来なくなります。

BMC の各設定について、BMC の Web ブラウザからの設定の「デフォルト設定」の値と、BMC Initialization 実行時に設定される初期値は以下の表のようになっています。

設定メニュー	設定情報	Web ブラウザ デフォルト値	BMC 初期値
システム操作	暗号化設定	有効	無効
	ポート番号設定(暗号化 無効時)	7578	7578
	ポート番号設定(暗号化 有効時)	7582	7582
	マウスカーソルモード	Dual	Single
	座標モード	Absolute	Absolute
	キーボード言語	日本語でログイン した場合は Japanese、英語で ログインした場合 は English	English
	リモートメディア暗号化 設定	有効	無効
	ポート番号設定(暗号化	5120	5120

	無効時)		
	ポート番号設定(暗号化有効時)	5124	5124
その他	アクセスログ設定、HTTP	無効	無効
	HTTPS	無効	無効
	SSH	無効	無効
	操作系	無効	無効

6. コマンドラインインタフェース

Express5800/R320g における BMC のコマンドラインインタフェース機能については、以下のサイトに情報掲載いたしますので、ご参照願います。

- ・『サポート情報 [PC サーバ] Express5800』 (<https://support.express.nec.co.jp/pcserver/>)

または

- ・『NEC サポートポータル』 (<https://www.support.nec.co.jp/PShome.aspx>) のサポート情報

概要

BMC のコマンドラインインタフェースを使用し、SSH クライアントからサーバーのリモート制御を行うことができます。

サポートしているプロトコルは SSH (バージョン 2) です。

7. WS-Management (Web Service for Management)

概要

WS-Management プロトコルを使用して、サーバサーバーの電源制御やセンサ情報の確認がご利用いただけます。



EXPRESSSCOPE エンジン 3 の WS-Management は、DMTF の Web Service for Management の 1.0.0 の仕様に基づいています。



WS-Management プロトコルに対応している以下のツールで動作確認を実施しています。

- ・ Windows Remote Management (WinRM) 2.0



WS-Management を使用するためには、HTTPS 接続を有効に設定してください。設定方法については、2 章「サーバー側の設定」の「BMC のネットワーク設定」の章を参照してください。

電源制御

装置の電源制御を行うことができます。



OS が動作している状態でこれらの操作を行うことで、サーバーのデータが失われる可能性があります。



WS-Management で、電源制御を行うためには Operator 権限または Administrator 権限が必要です。

電源 ON

WinRM を使用する場合、ファイル input-RequestPowerStateChange2.xml を作成し、以下のよう to 実行してください。

```
winrm invoke RequestPowerStateChange
"http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/CIM_PowerManagementService?_
_cimnamespace=root/cimv2+Name=Host Power Management
Service+CreationClassName=CIM_PowerManagementService+SystemName=Unknown. IPMI_BM
C_DeviceID. DEVICEID_VALUE+SystemCreationClassName=CIM_HostComputerSystem"
-r:https://IP_ADDRESS/wsman -username:USERNAME -password:PASSWORD -auth:basic
-encoding:utf-8 -format:xml -file:input-RequestPowerStateChange2.xml
-skipCNcheck -skipCAcheck - skipRevocationcheck
```

input-RequestPowerStateChange2.xml

```
<n1:RequestPowerStateChange_INPUT
xmlns:n1="http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/CIM_PowerManagementService"
xmlns:wsa="http://schemas.xmlsoap.org/ws/2004/08/addressing"
xmlns:wsman="http://schemas.dmtf.org/wbem/wsman/1/wsman.xsd">
  <n1:PowerState>2</n1:PowerState>
  <n1:ManagedElement>
    <wsa:ReferenceParameters>
      <wsman:ResourceURI>http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/CIM_HostComputerSystem
      </wsman:ResourceURI>
      <wsman:SelectorSet>
        <wsman:Selector Name='__cimnamespace'>root/cimv2</wsman:Selector>
        <wsman:Selector Name='CreationClassName'>CIM_HostComputerSystem</wsman:Selector>
        <wsman:Selector Name='Name'>Unknown. IPMI BMC DeviceID.DEVICEID_VALUE</wsman:Selector>
      </wsman:SelectorSet>
    </wsa:ReferenceParameters>
  </n1:ManagedElement>
</n1:RequestPowerStateChange_INPUT>
```

“IP_ADDRESS” は EXPRESSSCOPE エンジン 3 の IP アドレス、
” USERNAME/PASSWORD” は EXPRESSSCOPE エンジン 3 にログインする際のユーザー名/パスワードを設定ください。

“DEVICEID_VALUE” は、下記のいずれかの手順で表示される値を指定してください。



1. EXPRESSSCOPE エンジン 3 にログインして、[システム]-[IPMI 情報]画面の[MC]ボタンをクリックして「マネージメントコントローラ情報(MC)」画面を起動してください。Basebrd Mgmt Ctrl の[デバイス ID]に表示されている値を DEVICEID に指定してください。([デバイス ID] が 88h の場合、136 を指定)
2. WinRM で CIM_PowermanagementService クラスへの Enumeration¹を実行し、レスポンスデータ内の SystemName に表示されている数値を指定してください。(例 :SystemName = Unknown. IPMI BMC DeviceID.136)

¹ "winrm enumerate

"http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/CIM_PowermanagementService"
-r:https:IP_ADDRESS/wsman -username:USERNAME -password: PASSWORD -auth:basic
-encoding:utf-8 -skipCAcheck -skipCNcheck -skipRevocationcheck"

強制電源 OFF

WinRM を使用する場合、ファイル input-RequestPowerStateChange6.xml を作成し、以下のよう
に実行してください。

```
winrm invoke RequestPowerStateChange  
"http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/CIM_PowerManagementService?_  
_cimnamespace=root/cimv2+Name=Host Power Management  
Service+CreationClassName=CIM_PowerManagementService+SystemName=Unknown. IPMI_BM  
C_DeviceID. " DEVICEID" 136+SystemCreationClassName=CIM_HostComputerSystem"  
-r:https://IP_ADDRESS/wsman -username:USERNAME -password:PASSWORD -auth:basic  
-encoding:utf-8 -format:xml -file:input-RequestPowerStateChange6.xml  
-skipCNcheck -skipCAcheck - skipRevocationcheck
```

input-RequestPowerStateChange6.xml

```
<n1:RequestPowerStateChange_INPUT  
xmlns:n1="http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/CIM_PowerManagementService"  
xmlns:wsa="http://schemas.xmlsoap.org/ws/2004/08/addressing"  
xmlns:wsman="http://schemas.dmtf.org/wbem/wsman/1/wsman.xsd">  
<n1:PowerState>6</n1:PowerState>  
<n1:ManagedElement>  
<wsa:ReferenceParameters>  
<wsman:ResourceURI>http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/CIM_HostComputerSystem  
</wsman:ResourceURI>  
<wsman:SelectorSet>  
<wsman:Selector Name='__cimnamespace'>root/cimv2</wsman:Selector>  
<wsman:Selector Name='CreationClassName'>CIM_HostComputerSystem</wsman:Selector>  
<wsman:Selector Name='Name'>Unknown. IPMI BMC DeviceID.DEVICEID_VALUE</wsman:Selector>  
</wsman:SelectorSet>  
</wsa:ReferenceParameters>  
</n1:ManagedElement>  
</n1:RequestPowerStateChange_INPUT>
```

“IP_ADDRESS” は EXPRESSSCOPE エンジン 3 の IP アドレス、
” USERNAME/PASSWORD” は EXPRESSSCOPE エンジン 3 にログインする際のユーザー名/パスワードを設定ください。

“DEVICEID_VALUE” は、下記のいずれかの手順で表示される値を指定してください。



1. EXPRESSSCOPE エンジン 3 にログインして、[システム]-[IPMI 情報]画面の[MC]ボタンをクリックして「マネージメントコントローラ情報(MC)」画面を起動してください。Basebrd Mgmt Ctrl の[デバイス ID]に表示されている値を DEVICEID に指定してください。([デバイス ID] が 88h の場合、136 を指定)
2. WinRM で CIM_PowermanagementService クラスへの Enumeration²を実行し、レスポンスデータ内の SystemName に表示されている数値を指定してください。(例 :SystemName = Unknown. IPMI BMC DeviceID.136)

² "winrm enumerate

"http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/CIM_PowermanagementService"
-r:https:IP_ADDRESS/wsman -username:USERNAME -password: PASSWORD -auth:basic
-encoding:utf-8 -skipCAcheck -skipCNcheck -skipRevocationcheck"

OS シャットダウン

WinRM を使用する場合、ファイル input-RequestPowerStateChange8.xml を作成し、以下のよう
に実行してください。

```
winrm invoke RequestPowerStateChange
"http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/CIM_PowerManagementService?_
_cimnamespace=root/cimv2+Name=Host Power Management
Service+CreationClassName=CIM_PowerManagementService+SystemName=Unknown. IPMI_BM
C_DeviceID. DEVICEID_VALUE+SystemCreationClassName=CIM_HostComputerSystem"
-r:https://IP_ADDRESS/wsman -username:USERNAME -password:PASSWORD -auth:basic
-encoding:utf-8 -format:xml -file:input-RequestPowerStateChange8.xml
-skipCNcheck -skipCAcheck - skipRevocationcheck
```

input-RequestPowerStateChange8.xml

```
<n1:RequestPowerStateChange_INPUT
xmlns:n1="http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/CIM_PowerManagementService"
xmlns:wsa="http://schemas.xmlsoap.org/ws/2004/08/addressing"
xmlns:wsman="http://schemas.dmtf.org/wbem/wsman/1/wsman.xsd">
<n1:PowerState>8</n1:PowerState>
<n1:ManagedElement>
<wsa:ReferenceParameters>
<wsman:ResourceURI>http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/CIM_HostComputerSystem
</wsman:ResourceURI>
<wsman:SelectorSet>
<wsman:Selector Name='__cimnamespace'>root/cimv2</wsman:Selector>
<wsman:Selector Name='CreationClassName'>CIM_HostComputerSystem</wsman:Selector>
<wsman:Selector Name='Name'>Unknown. IPMI BMC DeviceID. DEVICEID_VALUE</wsman:Selector>
</wsman:SelectorSet>
</wsa:ReferenceParameters>
</n1:ManagedElement>
</n1:RequestPowerStateChange_INPUT>
```



本操作は装置の電源ボタンを押した場合と同じ動作になります。シャットダウンを行うには、装置の POWER スイッチを押した際にシャットダウンを行うように OS が設定されている必要があります。



“IP_ADDRESS” は EXPRESSSCOPE エンジン 3 の IP アドレス、
“USERNAME/PASSWORD” は EXPRESSSCOPE エンジン 3 にログインする際のユーザー名/パスワードを設定ください。

“DEVICEID_VALUE” は、下記のいずれかの手順で表示される値を指定してください。

1. EXPRESSSCOPE エンジン 3 にログインして、[システム]-[IPMI 情報]画面の [MC] ボタンをクリックして「マネージメントコントローラ情報 (MC)」画面を起動してください。Basebrd Mgmt Ctrl の [デバイス ID] に表示されている値を DEVICEID に指定してください。([デバイス ID] が 88h の場合、136 を指定)

2. WinRM で CIM_PowermanagementService クラスへの Enumeration³を実行し、レスポンスデータ内の SystemName に表示されている数値を指定してください。(例 :SystemName = Unknown. IPMI BMC DeviceID. 136)

³ "winrm enumerate
"http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/CIM_PowermanagementService"
-r:https:IP_ADDRESS/wsman -username:USERNAME -password: PASSWORD -auth:basic
-encoding:utf-8 -skipCAcheck -skipCNcheck -skipRevocationcheck"

システムリセット

WinRM を使用する場合、ファイル `input-RequestPowerStateChange10.xml` を作成し、以下のよう実行してください。

```
winrm invoke RequestPowerStateChange
"http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/CIM_PowerManagementService?_
_cimnamespace=root/cimv2+Name=Host Power Management
Service+CreationClassName=CIM_PowerManagementService+SystemName=Unknown. IPMI_BM
C_DeviceID. DEVICEID_VALUE+SystemCreationClassName=CIM_HostComputerSystem"
-r:https://IP_ADDRESS/wsman -username:USERNAME -password:PASSWORD -auth:basic
-encoding:utf-8 -format:xml -file:input-RequestPowerStateChange10.xml
-skipCNcheck -skipCAcheck - skipRevocationcheck
```

input-RequestPowerStateChange10.xml

```
<n1:RequestPowerStateChange_INPUT
xmlns:n1="http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/CIM_PowerManagementService"
xmlns:wsa="http://schemas.xmlsoap.org/ws/2004/08/addressing"
xmlns:wsman="http://schemas.dmtf.org/wbem/wsman/1/wsman.xsd">
  <n1:PowerState>10</n1:PowerState>
  <n1:ManagedElement>
    <wsa:ReferenceParameters>
      <wsman:ResourceURI>http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/CIM_HostComputerSystem
</wsman:ResourceURI>
      <wsman:SelectorSet>
        <wsman:Selector Name='__cimnamespace'>root/cimv2</wsman:Selector>
        <wsman:Selector Name='CreationClassName'>CIM_HostComputerSystem</wsman:Selector>
        <wsman:Selector Name='Name'>Unknown. IPMI BMC DeviceID. DEVICEID_VALUE</wsman:Selector>
      </wsman:SelectorSet>
    </wsa:ReferenceParameters>
  </n1:ManagedElement>
</n1:RequestPowerStateChange_INPUT>
```

“IP_ADDRESS” は EXPRESSSCOPE エンジン 3 の IP アドレス、
” USERNAME/PASSWORD” は EXPRESSSCOPE エンジン 3 にログインする際のユーザー名/パスワードを設定ください。

“DEVICEID_VALUE” は、下記のいずれかの手順で表示される値を指定してください。



1. EXPRESSSCOPE エンジン 3 にログインして、[システム]-[IPMI 情報] 画面の [MC] ボタンをクリックして「マネージメントコントローラ情報 (MC)」画面を起動してください。Basebrd Mgmt Ctrl の [デバイス ID] に表示されている値を DEVICEID に指定してください。([デバイス ID] が 88h の場合、136 を指定)
2. WinRM で CIM_PowermanagementService クラスへの Enumeration⁴を実行し、レスポンスデータ内の SystemName に表示されている数値を指定してください。(例 : SystemName = Unknown. IPMI BMC DeviceID. 136)

⁴ "winrm enumerate

"http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/CIM_PowermanagementService"
-r:https:IP_ADDRESS/wsman -username:USERNAME -password: PASSWORD -auth:basic
-encoding:utf-8 -skipCAcheck -skipCNcheck -skipRevocationcheck"

OS ダンプ用割り込み

WinRM を使用する場合、ファイル `input-RequestPowerStateChange11.xml` を作成し、以下のよう実行してください。

```
winrm invoke RequestPowerStateChange
"http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/CIM_PowerManagementService?_
_cimnamespace=root/cimv2+Name=Host Power Management
Service+CreationClassName=CIM_PowerManagementService+SystemName=Unknown. IPMI_BM
C_DeviceID. DEVICEID_VALUE+SystemCreationClassName=CIM_HostComputerSystem"
-r:https://IP_ADDRESS/wsman -username:USERNAME -password:PASSWORD -auth:basic
-encoding:utf-8 -format:xml -file:input-RequestPowerStateChange11.xml
```

input-RequestPowerStateChange11.xml

```
<n1:RequestPowerStateChange_INPUT
xmlns:n1="http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/CIM_PowerManagementService"
xmlns:wsa="http://schemas.xmlsoap.org/ws/2004/08/addressing"
xmlns:wsman="http://schemas.dmtf.org/wbem/wsman/1/wsman.xsd">
<n1:PowerState>11</n1:PowerState>
<n1:ManagedElement>
<wsa:ReferenceParameters>
<wsman:ResourceURI>http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/CIM_HostComputerSystem
</wsman:ResourceURI>
<wsman:SelectorSet>
<wsman:Selector Name='__cimnamespace'>root/cimv2</wsman:Selector>
<wsman:Selector Name='CreationClassName'>CIM_HostComputerSystem</wsman:Selector>
<wsman:Selector Name='Name'>Unknown. IPMI BMC DeviceID. DEVICEID_VALUE</wsman:Selector>
</wsman:SelectorSet>
</wsa:ReferenceParameters>
</n1:ManagedElement>
</n1:RequestPowerStateChange_INPUT>
```



本操作は、装置の DUMP スイッチを押す操作に相当します。



OS が動作している状態でこれらの操作を行うことで、サーバーのデータが失われる可能性があります。

“IP_ADDRESS” は EXPRESSSCOPE エンジン 3 の IP アドレス、
” USERNAME/PASSWORD” は EXPRESSSCOPE エンジン 3 にログインする際のユーザー名/パスワードを設定ください。
“DEVICEID_VALUE” は、下記のいずれかの手順で表示される値を指定してください。



1. EXPRESSSCOPE エンジン 3 にログインして、[システム]-[IPMI 情報] 画面の [MC] ボタンをクリックして「マネージメントコントローラ情報 (MC)」画面を起動してください。Basebrd Mgmt Ctrl の [デバイス ID] に表示されている値を DEVICEID に指定してください。([デバイス ID] が 88h の場合、136 を指定)
2. WinRM で CIM_PowermanagementService クラスへの Enumeration⁵を実行し、レスポンスデータ内の SystemName に表示されている数値を指定してください。(例 :SystemName = Unknown. IPMI BMC DeviceID. 136)

⁵ "winrm enumerate

"http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/CIM_PowermanagementService"
-r:https:IP_ADDRESS/wsman -username:USERNAME -password: PASSWORD -auth:basic
-encoding:utf-8 -skipCAcheck -skipCNcheck -skipRevocationcheck"

センサー情報の表示

センサー情報の一覧表示と指定したセンサー番号のセンサー情報表示を行うことができます。

一覧表示

WinRM を使用して、閾値を持つセンサー（温度、電圧センサー等）を表示する場合、以下のよう
に実行してください。

```
winrm enumerate  
http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/CIM_NumericSensor  
-username:USERNAME -password:PASSWORD -r:https://IP_ADDRESS/wsman -auth:basic  
-encoding:utf-8 -skipCAcheck -skipCNcheck -skipRevocationcheck
```

WinRM を使用して、閾値を持たないセンサー（電源モジュール等）を表示する場合、以下のよ
うに実行してください。

```
winrm enumerate http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/CIM_Sensor  
-username:USERNAME -password:PASSWORD -r:https://IP_ADDRESS/wsman -auth:basic  
-encoding:utf-8 -skipCAcheck -skipCNcheck -skipRevocationcheck
```



“IP_ADDRESS” は EXPRESSSCOPE エンジン 3 の IP アドレス、
” USERNAME/PASSWORD” は EXPRESSSCOPE エンジン 3 にログインする際のユー
ザー名/パスワードを設定ください。

個別表示

指定したセンサーの情報を個別に表示することも可能です。WinRMを使用して、閾値を持つセ
ンサー番号48のセンサーを表示する場合、以下のように実行してください。

```
winrm get  
"http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/CIM_NumericSensor?SystemCrea  
tionClassName=CIM_HostComputerSystem+CreationClassName=CIM_NumericSensor+System  
Name=Unknown. IPMI BMC DeviceID.DEVICEID_VALUE+DeviceID=1.48.0.32.1.99"  
-r:https://IP_ADDRESS/wsman -username:USERNAME -password:PASSWORD -auth:basic  
-encoding:utf-8 -skipCAcheck -skipCNcheck -skipRevocationcheck
```



“IP_ADDRESS” は EXPRESSSCOPE エンジン 3 の IP アドレス、
” USERNAME/PASSWORD” は EXPRESSSCOPE エンジン 3 にログインする際のユー
ザー名/パスワードを設定ください。

“DEVICEID_VALUE” は、下記のいずれかの手順で表示される値を指定してく
ださい。

1. EXPRESSSCOPE エンジン 3 にログインして、[システム]-[IPMI 情報]
画面の [MC] ボタンをクリックして「マネージメントコントローラ情
報 (MC)」画面を起動してください。Basebrd Mgmt Ctrl の [デバイス
ID] に表示されている値を DEVICEID に指定してください。（[デバイ
ス ID] が 88h の場合、136 を指定）

2. WinRM で CIM_Sensor クラスへの Enumeration⁶を実行し、レスポンスデータ内の SystemName に表示されている数値を指定してください。
(例: SystemName = Unknown. IPMI BMC DeviceID. 136)



センサ番号を指定する際には一覧表示で取得した Device ID を指定します。

⁶ "winrm enumerate "http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/CIM_Sensor"
-r:https:IP_ADDRESS/wsman -username:USERNAME -password: PASSWORD -auth:basic
-encoding:utf-8 -skipCAcheck -skipCNcheck -skipRevocationcheck"

8. トラブルシューティング

エラーメッセージ

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```
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 * FIPS 180-2 SHA-224/256/384/512 implementation
 * Last update: 02/02/2007
 * Issue date: 04/30/2005
 *
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```
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 * HMAC-SHA-224/256/384/512 implementation
 * Last update: 06/15/2005
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```

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```

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ExplorerCanvas

js-tables

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