

BMC管理コンソール ユーザーズガイド

NEC Express サーバ

Express5800 シリーズ

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本書について

本書は、サーバーのBMC管理コンソール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。
CPU スロットリング	サーバーの負荷状況に応じて、CPU の動作周波数を制限する機能です。
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。
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。
SOL	Serial Over LAN サーバーのシリアル入出力によるコンソールリダイレクションを LAN で接続された管理 PC 上で実現する機能です。
仮想 KVM ビューア	サーバー上のビデオ出力およびキーボード/マウス入力 (Keyboard Video Mouse/KVM)を管理PC上で仮想的に実現する機能です
仮想メディア	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。
NIC	Network Interface Controller サーバー上のネットワーク機能を提供するコントローラです。
NCSI	Network Controller Sideband Interface BMCからオンボードのシステムLANを使用するためのネットワークコントローラ管理インターフェースのことです。
PEF	SELに登録されるイベントが発生した際にBMCが通報を行うための機能です。通報以外にも電源オフ等の制御も行うことができます。

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

本製品が提供する BMC 管理コンソールを使用することで、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。

BMC 管理コンソールはシステム管理用 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 BMC 管理コンソールのことを BMC と記載します。

*本機能はオプションです。

1. 機能概要

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 ブラウザーや 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、オプションの N8115-32 リモートマネージメント拡張ライセンスをインストールすることにより、仮想 KVM/メディア機能を使用することができるようになります。仮想 KVM/メディア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(仮想 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、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

BMC 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: 192.168.0.120

デフォルトユーザー1:

ユーザー名: admin

パスワード: password

デフォルトユーザー2:

ユーザー名: ADMIN

パスワード: ADMIN

- 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 “192.168.0.120” 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 “192.168.0.120” が使用できない環境では、サーバーにて BIOS セットアップユーティリティ (SETUP) を利用して、マネージメント用 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「マネージメント LAN 設定」を参照してください。

ネットワークを介して制御できる機器において、その制御用パスワードを初期値のまま運用しますと、悪意のある第三者による不正アクセスを許すリスクが発生します。不正アクセスにより機器が乗っ取られますと、情報漏えいのみならず、可用性や完全性を阻害してシステムに被害を生じさせたり、ボットネットによるサイバー攻撃の足場に悪用されたりする可能性があります。



当製品の初期パスワードは、あくまでも保守運用における初期設定のために設けられています。**初期設定時に必ずパスワード変更を行ってください。**もし初期パスワードのまま運用して不正アクセスの被害が発生した場合、**当社は一切の責任を負うことができません。**

なお、パスワード変更を行っても、強度の低いもの（桁数の少ないもの）や容易に考えられるもの（“123456789”，“abcdefg”，“password”，“Administrator” など）では不正アクセスの防止が困難です。**強度の強いパスワード（8文字以上で大文字/小文字/数字/記号混在のものを推奨）に変更頂きますようお願い致します。**

《パスワード変更の方法》

BMC 管理コンソールユーザズガイド 第 5 章 「リモートマネージメントの使い方」の「デフォルトのパスワード変更の方法」を参照願います。

マネージメント LAN 設定

Web サーバー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ー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 ブラウザー
詳細は 5 章を参照してください。
- BIOS セットアップユーティリティ
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 F2 キーを押して、BIOS を起動します。詳細は本体装置のメンテナンスガイドを参照してください。

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。以下は、基本的な IPv4 接続に必要な設定項目です。IPv6 接続に関してはオンラインヘルプを参照してください。

設定項目	Web ブラウザー	BIOS セットアップ ユーティリティ
BMC のネットワーク設定 専用(Dedicated) / 共有(NCSI)	○	○
接続タイプ	○	×
IPv4 有効/無効	○	×
IPv4 DHCP を使用する	○	○
IPv4 IP アドレス	○	○
IPv4 サブネットマスク	○	○
IPv4 ゲートウェイ	○	○

専用(Dedicated) / 共有(NCSI)

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「専用(Dedicated)」、サーバー LAN ポートを共有して使う場合は、「共有(NCSI)」を選択します。「共有(NCSI)」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ズガイドを参照してください。デフォルトは「専用

(Dedicated)」です。)



共有(NCSI)を設定した場合には、共有するサーバーLAN ポートと BMC は直接通信出来ません。共有するサーバーLAN ポートと BMC を通信させる場合、専用(Dedicated)を設定してご使用ください。



共有(NCSI)を設定した場合には、本体装置の起動時にサーバーLAN ポートが初期化されるため、一時的にネットワーク接続が切断されます。



本製品では Shared with Failover をサポートしていません。Shared with Failover は設定しないでください。

接続タイプ

使用するリンク速度と Duplex モードを設定してください。



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、マネージメント専用 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マネージメント専用 LAN を同じ設定にしてください。

IPv4 設定:

DHCP を使用する

DHCP を使用すると、NIC の IP アドレスが DHCP サーバーから取得され、IP アドレス、サブネットマスク、およびゲートウェイの設定は無効になります。

IP アドレス

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ください。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 192.168.0.120 です。)

サブネットマスク

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ください。

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。)

ゲートウェイ

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ください。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 192.168.0.1 です。)



BMC のネットワーク設定を変更した場合、クライアント等から BMC へのネットワーク接続が切断されます。

注記： IPMI には IPMI 2.0 仕様におけるパスワードハッシュを取得される脆弱性(CVE-2013-4786)問題が含まれています。

[脆弱性概要]

IPMI 2.0 の仕様は、RMCP+ Authenticated Key-Exchange Protocol (RAKP) 認証をサポートしているため、パスワードハッシュを取得される、およびオフラインパスワード推測攻撃を実行される脆弱性が存在します。

[解決方法]

この問題に対する解決策はありません。IPMI2.0 仕様の認証プロセスは、クライアント認証に先がけてサーバーが要求されたユーザーのパスワードの SHA1、MD5 ハッシュをクライアントに送るように規定しています。BMC は、要求されたユーザーアカウントのパスワードハッシュを返しますが、このパスワードハッシュからオフラインでパスワードを推測することができます。この機能は、IPMI2.0 仕様の重要な部分で IPMI2.0 仕様から逸脱せずこの問題を解決することはできません。そのため、このリスクを軽減させるために以下を行うことを推奨します。



- IPMI を使用しない場合、IPMI over LAN を無効化してください。
BMC 管理コンソールの[EMS]-[設定]-[IPMI]で[IPMI over LAN を有効にする]を無効化することができます。
- IPMI を使用する場合、BMC 管理コンソールへのアクセスを制限し、分離したマネージメント LAN/VLAN、アクセス制御リスト(ACL)または VPN を使用してください。
- 最新の BMC ファームウェアを適用してください。
- システム、ネットワーク上のパスワード管理において最善な方策をとってください。強固なパスワードを使用してください。

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。

動作対応ブラウザ

Windows 7 (SP1), Windows 8.1, Windows 10, Windows Server 2008 R2 (SP1), Windows Server 2012 R2, Windows Server 2016 および Red Hat Enterprise Linux 6.2 64bit 上の以下のブラウザで動作します。

- Microsoft Internet Explorer 11.0
- Firefox ESR 52 以上
- Chrome 54 以上

※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。

※2016 年 1 月 12 日以降、各 Windows OS 上で利用可能な最新バージョンの Internet Explorer のみがテクニカルサポートとセキュリティのアップグレードを受けます。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/en-us/WindowsForBusiness/End-of-IE-support>

<https://support.microsoft.com/en-us/lifecycle#gp/Microsoft-Internet-Explorer>

ブラウザの設定

以下の設定を行ってください。

- SSL を有効にしてください。
- 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 をご利用の場合、以下の設定が必要です。

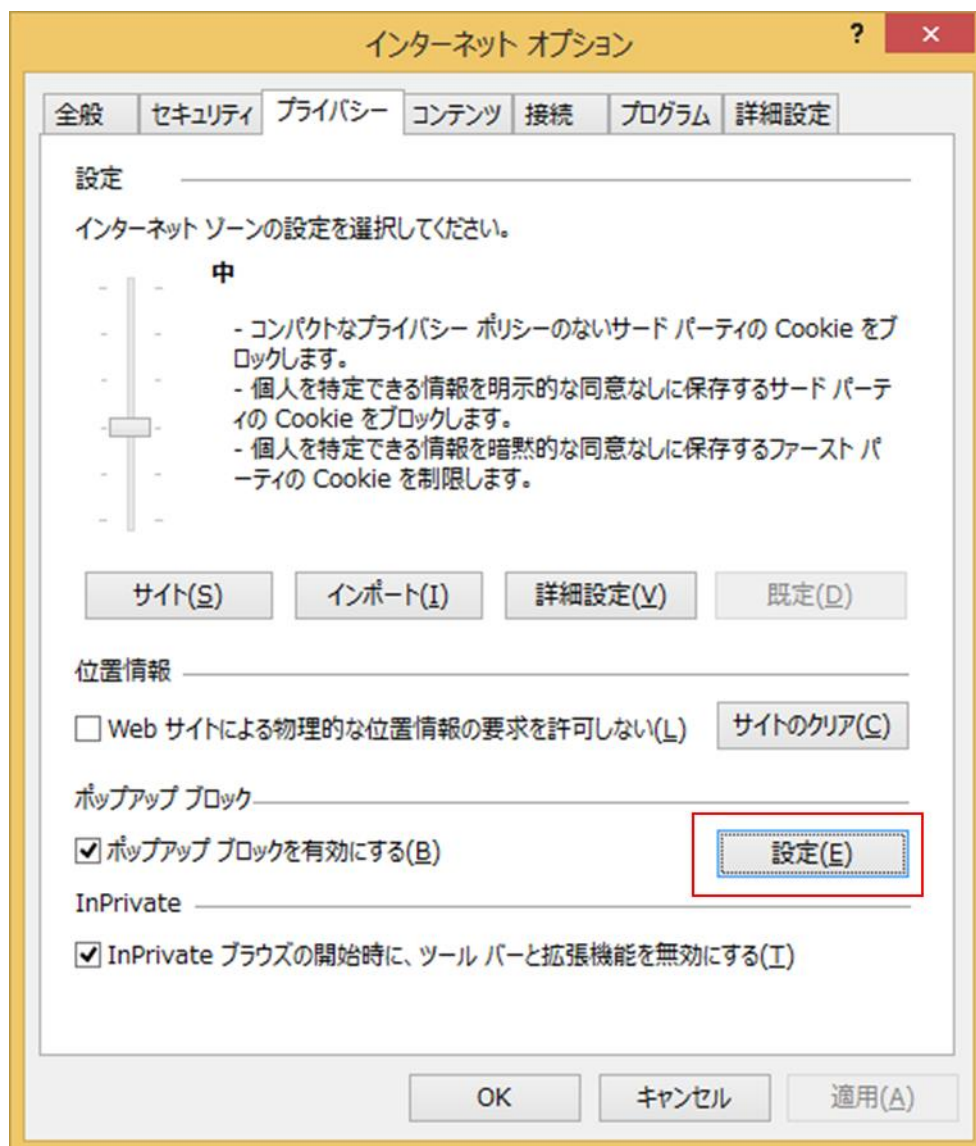
- BMC のアドレスを信頼済みサイトに登録してください。
- 信頼済みサイトのセキュリティレベルは「中」にしてください。
- セキュリティ強化の構成が有効の場合、信頼済みサイトに「about:blank」の登録が必要になる場合があります。
- [インターネットオプション]→[詳細設定]→[セキュリティ]から「暗号化されたページをディスクに保存しない」のチェックを外しておくことが必要になる場合があります。
- [インターネットオプション]→[詳細設定]→[マルチメディア]から「Web ページのアニメー

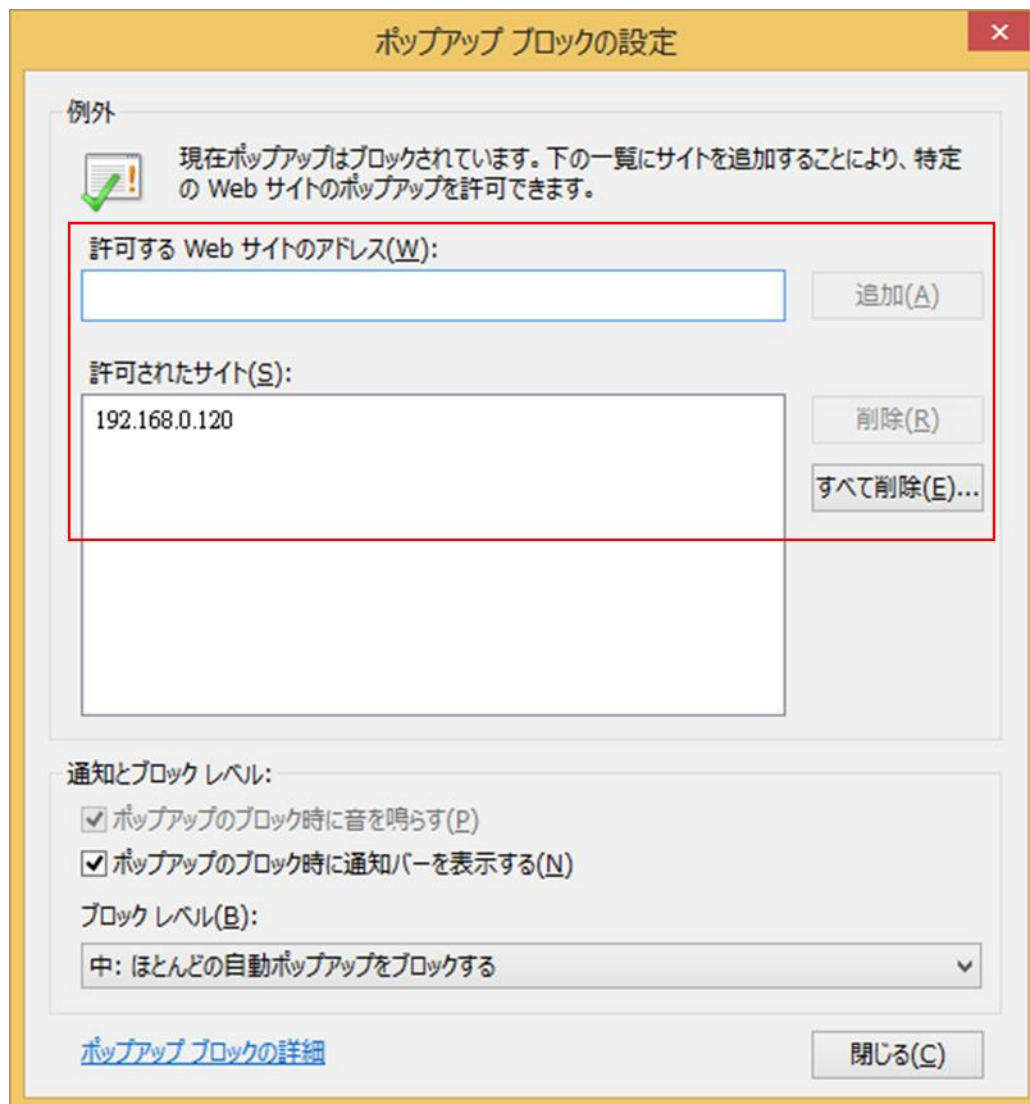
ションを再生する」のチェックを行なっておく必要がある場合があります。

- 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。

※仮想 KVM ビューア(HTML5 版)をご利用の場合、BMC の IP アドレスに対するポップアップブロックを許可するための設定が必要です。Internet Explorer 11 の場合の設定方法を以下に記載します。

- [インターネットオプション]→[プライバシー]→[ポップアップブロック]→[設定]から[許可する Web サイトのアドレス]に BMC の IP アドレスを追加します。





JAVA RUNTIME ENVIRONMENT

仮想 KVM ビューア (Java 版) をご使用の場合、Java Runtime Environment, Standard Edition 8.0 が必要です。32bit 版のみサポートしています。

※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。

- BMC 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。



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
Web ブラウザー (暗号化無効時)	不定(*1)	TCP	↔	BMC	80(*3)
Web ブラウザー (暗号化有効時)	不定(*1)	TCP	↔	BMC	443(*3)
仮想 KVM/メディア (暗号化無効時)	不定(*1)	TCP	↔	BMC	2068(*2)
仮想 KVM/メディア (暗号化有効時)	不定(*1)	TCP	↔	BMC	2068(*2)
SSH クライアント	不定(*1)	TCP	↔	BMC	22
SMTP サーバー	25(*4)	TCP	↔	BMC	不定
LDAP サーバー	389(*5)	TCP	↔	BMC	不定
SNMP サーバー	162	UDP	↔	BMC	不定
WS-Management サーバー(暗号化無効時)	不定(*1)	TCP	↔	BMC	5985
WS-Management サーバー(暗号化有効時)	不定(*1)	TCP	↔	BMC	5986

*1 OS/他の SW が未使用のポートを利用します。

*2 [サーバー情報]-[仮想 KVM/メディア]-[設定]で変更可能

*3 [EMS]-[設定]-[サービス]で変更可能

*4 [サーバー情報]-[イベント管理]-[メール設定]で変更可能

*5 [EMS]-[LDAP]で変更可能



BMC は HTTP プロキシサーバー経由での接続をサポートしておりません。



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 サーバー機能を使用し、Web ブラウザーからサーバーの電源制御や仮想 KVM ビューアがご利用いただけます。

接続方法

管理 PC 上の Web ブラウザーから下記の 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: 192.168.0.120:80)
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。



HTTP で接続すると、Web ブラウザは自動的に HTTPS にリダイレクトします。



HTTPS 接続時に、暗号化通信のためのサーバー証明書に関する「セキュリティの警告」が表示される場合があります。



暗号化通信のサーバー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)。



この Web サイトのセキュリティ証明書には問題があります。

この Web サイトで提示されたセキュリティ証明書は、信頼された証明機関から発行されたものではありません。

セキュリティ証明書の問題によって、詐欺や、お使いのコンピュータからサーバーに送信される情報を盗み取る意図が示唆されている場合があります。

このページを閉じて、この Web サイトの閲覧を続行しないことを推奨します。

✔ ここをクリックしてこの Web ページを閉じる。

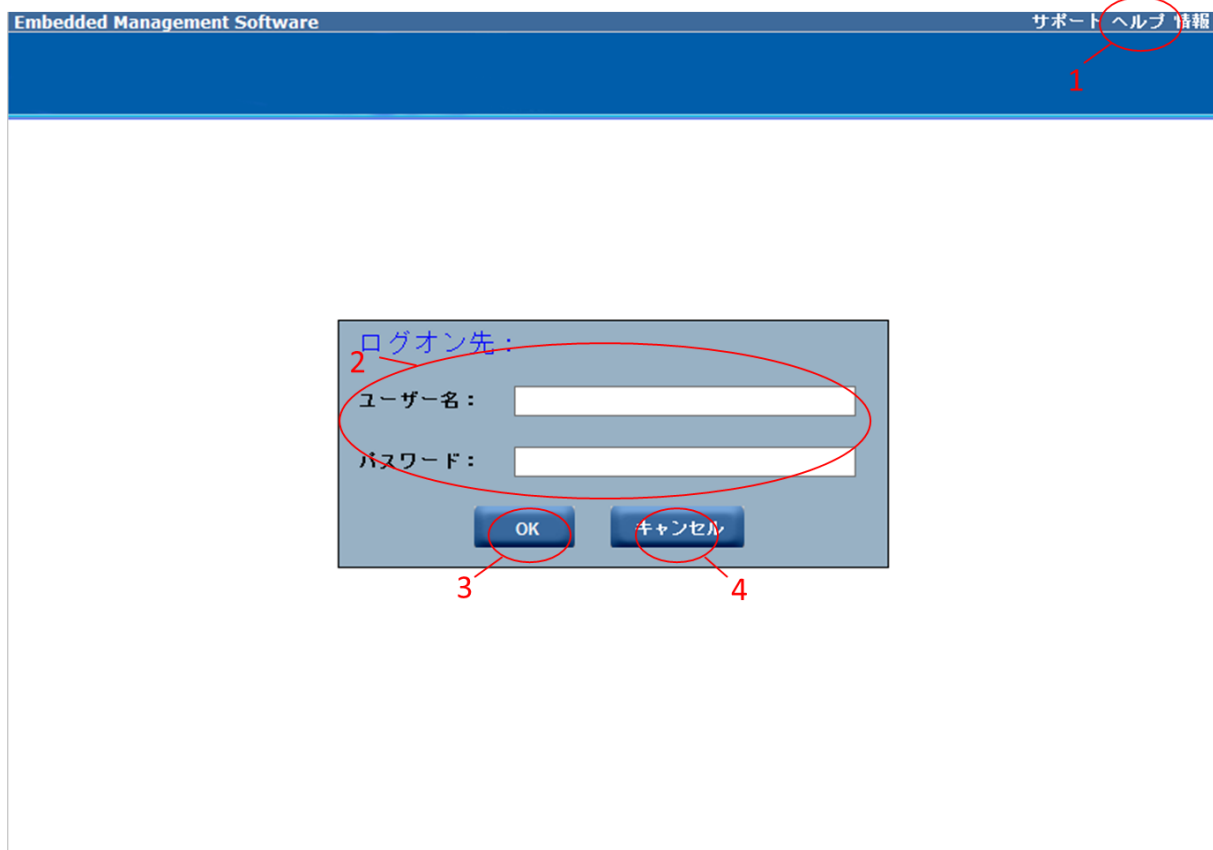
✖ このサイトの閲覧を続行する (推奨されません)。

▼ 詳細情報

ログイン・ログアウト

ログイン

ログインページが表示されたら、ユーザー名とパスワードを入力し、[OK]をクリックします。



1. オンラインヘルプを表示します。
2. ユーザー名とパスワードを入力します。
3. 「OK」ボタンを押下してログインします。
4. 「キャンセル」ボタンを押下してログインをキャンセルします。



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

ログアウト

画面右上の「ログアウト」をクリックするとログアウトをします。

ログアウトすると、ログインページに戻ります。



ログイン中にブラウザー動作が遅くなった場合、一度ブラウザーの再起動、またはログアウトを行ってください。



ネットワーク設定を変更後または、BMC リブー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。

ヘッダーメニュー



1. サポートについての情報を表示します。
2. オンラインヘルプを表示します。
3. BMC のバージョン情報を表示します。

ログインユーザー情報

ログイン後にブラウザの下にログインしたユーザーの情報を表示します。

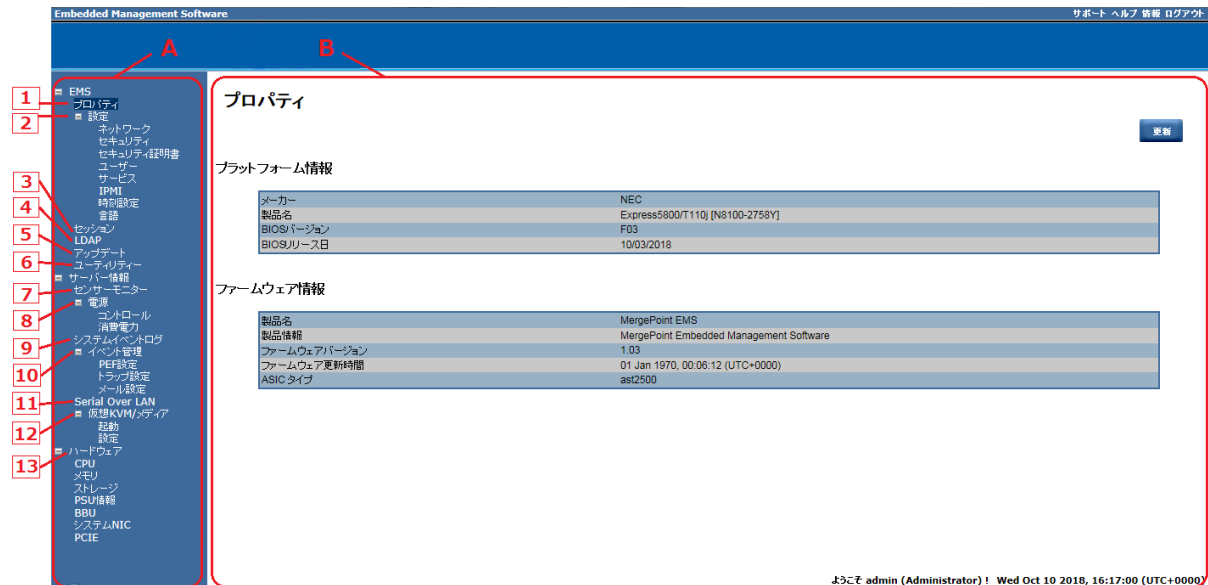


ようこそ admin (Administrator)! Sun Jun 12 2016, 17:15:47 (UTC+0000)

The screenshot shows a login message with three red annotations: a red '1' pointing to 'admin', a red '2' pointing to '(Administrator)', and a red '3' pointing to the date and time 'Sun Jun 12 2016, 17:15:47 (UTC+0000)'.

1. ログインユーザー名を表示します。
2. ログインユーザーの権限を表示します。
3. BMC の保持する現在の日付と時刻を表示します。

BMC メニュー



A. 選択可能なメニューを表示します。

B. A で選択された情報を表示します。上記の例では「プロパティ」画面を表示しています。

メニュー

1 プロパティ

サーバーの情報と BMC のバージョン情報を表示します。

2 設定

BMC の設定を行います。(ネットワーク、セキュリティ、セキュリティ証明書、ユーザー、サービス、IPMI、時刻設定、言語)

3 セッション

BMC にログインしているユーザーのセッション情報の表示とセッションの切断を行います。

4 LDAP

LDAP を使用したユーザー認証を行うための設定をします。

5 アップデート

サーバーの電源オフ/オン状態に関わらず、BMC ファームウェアのアップデートを行います。

6 ユーティリティ

BMC のリブート、BMC 設定の工場出荷時状態へのリセット、設定のバックアップ・リストアを行います。

7 センサーモニター

サーバーに搭載されているセンサー（温度、電圧、電流、ファン、電源モジュール、バッテリー）の状態の確認を行います。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。

8 電源

電源オン/オフ、パワーサイクル、ハードリセット（再起動）、NMI、OS シャットダウンを行います。また、消費電力の表示や制御を行います。

9 システムイベントログ

BMC のシステムイベントログ(SEL)情報を表示します。

10 イベント管理

プラットフォームイベントフィルタ (PEF)による SNMP トラップ、メール通報の設定を行います。

11 Serial Over LAN

Serial Over Lan(SOL)によるコンソールリダイレクションの設定を行います。

12 仮想 KVM/メディア

仮想 KVM ビューアの起動および、仮想 KVM ビューアと仮想メディアの設定変更を行います。仮想 KVM ビューアには Java 版と HTML5 版の 2 種類があります。

13 ハードウェア

CPU 情報、メモリ情報、ストレージ情報、PSU 情報、BBU 情報、システム NIC 情報、PCIE 情報を表示します。



アドミニストレーター権限のユーザーであるユーザー名“admin”と”ADMIN”以外にアドミニストレーター権限のユーザーがいない状態では”admin”と”ADMIN”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ー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。



ユーザーID 1 は変更しないでください。IPMI コマンドツール等でユーザーを追加または削除する場合は、ユーザーID を 2 から 16 まで使用できます。



時刻設定で NTP の動作モードを無効にしている場合、タイムゾーン設定は利用できません。



時刻設定のタイムゾーン設定を行う場合、サーバーのタイムゾーンを使用してください。



BMC リブートは、BMC に問題が発生している場合に使用してください。
BMC リブートが実行された後の 3 分間は、サーバーの電源 ON/電源 OFF
/リブートや各種スイッチの操作を行わないで下さい。



BMC のネットワーク設定変更や BMC リブートを行うと、クライアント等
から BMC へのネットワーク接続が切断されます。



BMC リブートは、BMC のみをリブートします。サーバーそのものは
リブートしません。



以下の設定はバックアップ・リストアの対象外です。リストア時には手動
での再設定を行ってください。

- ・ タイムゾーン設定
- ・ 仮想 KVM ビューア設定
- ・ 仮想メディアセッション設定



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。



ESMPRO/Server Manager やオフラインツールの Server Configuration
Utility を使用することで、より細やかな消費電力制御を行えます。



BMC 管理コンソールで消費電力設定を行う場合、ESMPRO/Server
Manager やオフラインツールの Server Configuration Utility で ECO 設定
を行わないでください。



BMC 管理コンソールでは消費電力設定での例外処理は非サポートです。



システムイベントログについては、ESMPRO/Server Manager、Ezclct
Viewer、オフラインツールの Maintenance Utility でより詳細な情報を確
認することが可能です。



PEF 設定ではリブート/パワーサイクル/電源オフを設定しないでください。
設定した場合、OS が動作している状態でサーバーが強制的に停止または再
起動され、サーバーのデータが失われる可能性があります。



プラットフォームイベントフィルタ(PEF)による SNMP トラップを使用して ESMPRO/Server Manager への通報を行う場合には、IP 通報先 1～3 を使用してください。

また、オフラインツールの Server Configuration Utility で ESMPRO Configuration メニューから Alert Acknowledges を有効に設定してください。

上記の設定を行う場合、ESMPRO/Server Manager 以外に対する通報には IP 通報先 4～8 を使用してください。



SNMP トラップ、メール通報では IP 通報先 1～8、メール通報 1～4 で設定した全ての通報先に対して設定順に通報されます。



プラットフォームイベントフィルタ (PEF)による SNMP トラップ、メール通報では IPv6 のリンクローカルアドレスへの通報をサポートしていません。

BMC の各設定について、BMC 管理コンソールに工場出荷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。



“ユーティリティ”メニューの“工場出荷時の設定”ボタンを押すことで工場出荷時の設定に変更されます。

設定メニュー	設定情報	工場出荷時の設定値
ネットワーク	モード	専用
	ホスト名	EMS
	DNS ドメイン名	AvctDomain
	グローバル DNS	有効
	グローバルダイナミック DNS	インタフェース別
ネットワーク インターフェース の設定	オートネゴシエーション	オン
	ネットワーク速度	1000Mb
	Duplex モード	全二重
一般設定	動的 DNS を有効にする	無効
	DNS ドメイン名に DHCP を使用する	有効
	ARP に対応	有効
IPv4 設定	有効	有効
	DHCP を使用する	無効
	IP アドレス	192.168.0.120
	サブネットマスク	255.255.255.0
	ゲートウェイ	192.168.0.1

	DHCP を使用して DNS サーバーアドレスを取得する	無効
	優先 DNS サーバー	0.0.0.0
	代替 DNS サーバー	0.0.0.0
IPv6 設定	有効	有効
	静的アドレスを使用する	有効
	DHCPv6 を使用する	有効
	ステートレス自動設定を使用 する	有効
	DHCP を使用して DNS サーバーアドレスを取得する	無効
	優先 DNS サーバー	::
	代替 DNS サーバー	::
	トラフィッククラス	0
	ホップ制限	64
	DUID	プラットフォームに依存
IPv6 アドレス一覧	静的 IP アドレス 1	1999::11/64, Enable
	静的 IP アドレス 2	1999::12/64, Enable
IPv6 ルーター設 定	静的ルータが有効	無効
	ダイナミックルータを有効に する	無効
	スタティックルータ 1 IP	::
	スタティックルータ 1 MAC	00:00:00:00:00:00
	スタティックルータ 1 プレフィックス	64
	スタティックルータ 2 IP	::
	スタティックルータ 2 MAC	00:00:00:00:00:00
	スタティックルータ 2 プレフィックス	64
VLAN 設定	VLAN ID を有効にする	無効
	VLAN ID	0
	優先	0
セキュリティ	IP アドレスブロック機能を 有効にする	無効
	IP アドレスブロックまでの 失敗回数	5
	IP アドレスブロックのウィン ドウ時間	60
	IP アドレスブロックによる ペナルティ時間	300
ユーザー	パスワードポリシーチェック を有効にする	無効
サービス	HTTP ポート番号	80
	HTTPS ポート番号	443
	タイムアウト	1800

IPMI	IPMI Serial を有効にする	有効
	接続モードの設定	ダイレクト接続ベーシックモード
	Baud Rate	57.6 kbps
	Flow Control	なし
	チャンネル権限レベルの制限	アドミニストレータ
	IPMI over LAN を有効にする	有効
	チャンネル権限レベルの制限	アドミニストレータ
	暗号化キー	00
時刻設定	動作モード	無効
	NTP サーバー1	空き
	NTP サーバー2	空き
	NTP サーバー3	空き
	要求モードでの更新間隔 (分)	3
	時間同期方法	ステップモード
	サーバーまたはクライアントのタイムゾーンを使用する	サーバーのタイムゾーン
	サーバーのタイムゾーン	UTC
言語	言語	English
LDAP	LDAP を有効にする	無効
	LDAP クライアントの暗号化を有効にする	有効
	バインド時にサーバ証明書を 確認する	無効
	証明書ファイルのパス	/etc/certs/cacerts/ldap.cert
	DNS を使用してサーバーを 検索する	無効
	ドメインソース	ログイン ID のドメインを使用する
	DNS SRV 要求のドメイン名	空き
	サービス名	ldap
	ドメインコントローラ 1	空き
	ドメインコントローラ 1 の ポート	389
	ドメインコントローラ 2	空き
	ドメインコントローラ 2 の ポート	389
	ドメインコントローラ 3	空き
	ドメインコントローラ 3 の ポート	389
	ベースドメイン名	空き
	UID 検索オブジェクトの値	sAMAccountName
	グループフィルタ	空き
	バインド方法	ログイン証明書を使用する
	クライアント ID を CC バインディングする	空き
	クライアントパスワードを	空き

	CC バインディングする	
	グループ ID 属性	memberOf
	グループの権限を照会するための属性	空
消費電力	電力制限管理を有効にする	無効
	電力制限 (ワット)	空
	サンプリング周期	空
	例外処理までの時間	空
PEF 設定	リブート	有効
	パワーサイクル	有効
	電源オフ	有効
	PET の生成	有効
	通報有効	無効
	Threshold Type, Temperature Critical Filter	なし, 無効
	Threshold Type, Temperature Warning Filter	なし, 無効
	Threshold Type, Voltage Critical Filter	なし, 無効
	Threshold Type, Voltage Warning Filter	なし, 無効
	Threshold Type, Fan Critical Filter	なし, 無効
	Threshold Type, Fan Warning Filter	なし, 無効
	Sensor-specific Type, Chassis Intrusion Critical Filter	なし, 無効
	Sensor-specific Type, Processor Warning Filter	なし, 無効
	Sensor-specific Type, Processor Critical Filter	なし, 無効
	Sensor-specific Type, Power Supply Warning Filter	なし, 無効
	Sensor-specific Type, Power Supply Critical Filter	なし, 無効
	Sensor-specific Type, Memory Warning Filter	なし, 無効
	Sensor-specific Type, Memory Critical Filter	なし, 無効
	Sensor-specific Type, Critical Interrupt Critical Filter	なし, 無効
	Sensor-specific Type, Watchdog 2 Critical Filter	なし, 無効
トラップ設定	IP 通報先 1	無効, IPv4, 0.0.0.0
	IP 通報先 2	無効, IPv4, 0.0.0.0
	IP 通報先 3	無効, IPv4, 0.0.0.0
	IP 通報先 4	無効, IPv4, 0.0.0.0
	IP 通報先 5	無効, IPv4, 0.0.0.0

	IP 通報先 6	無効, IPv4, 0.0.0.0
	IP 通報先 7	無効, IPv4, 0.0.0.0
	IP 通報先 8	無効, IPv4, 0.0.0.0
	コミュニティ名	public
メール設定	差出人	EMS@AvctDomain
	メール通報 1	無効, 空き, MergePoint email alert
	メール通報 2	無効, 空き, MergePoint email alert
	メール通報 3	無効, 空き, MergePoint email alert
	メール通報 4	無効, 空き, MergePoint email alert
	SMTP IP アドレス	0.0.0.0
	SMTP ポート番号	25
	有効	無効
	ユーザー名	空き
	パスワード	空き
	STARTTLS モード	AUTO
	SASL モード	AUTO
Serial Over Lan	Serial Over LAN を有効にする	無効
	Baud Rate	115.2 kbps
	チャンネル権限レベルの制限	アドミニストレータ
仮想 KVM ビューアの設定	有効	有効
	最大セッション数	4
	リモートポート	2068
	ビデオ暗号化が有効	有効
	優先クライアントタイプ	Java
仮想メディアセッションの設定	有効	有効
	暗号化を有効にする	無効



BMC メール通報の例:

以下の内容がメールで通報されます。

Message: MergePoint EMS x.x
Event: CPU1_Status: Processor sensor, Processor Automatically Throttled was asserted
Date/Time: 2017-06-06 16:42:30
Severity: WarningF/W version: x.x.x
Link1 : <http://xxxxxxxx/login.html>
F/W version: x.x.x

デフォルトのパスワード変更の方法

BMC のユーザー名とパスワードは以下の手順に変更してください。

- 1 プロパティ→設定→ユーザーをクリックしてください。
- 2 ユーザーID 2 をクリックしてください。
- 3 ユーザーID 2 のユーザー名を変更してください。
- 4 ユーザーID 2 のパスワードを変更してください。
- 5 「変更を適用」ボタンを押してください。
- 6 同様にユーザーID 3のユーザー名とパスワードも手順の2~5のように変更してください。

Embedded Management Software サポート ヘルプ 情報 ログアウト

- EMS
 - プロパティ
 - 設定
 - ネットワーク
 - セキュリティ
 - ユーザーID証明書
 - ユーザー**
 - サービス
 - IPMI
 - 時刻設定
 - 言語
 - セッション
 - LDAP
 - アップデート
 - ユーティリティ
- サーバー情報
 - センサーモニター
 - 電源
 - コントロール
 - 消費電力
 - システムイベントログ
 - イベント管理
 - PEF設定
 - トラップ設定
 - メール設定
 - Serial Over LAN
 - 仮想KVM/メディア
 - 起動
 - 設定
- ハードウェア
 - CPU
 - メモリ
 - ストレージ
 - PSU情報
 - BBU
 - システムNIC

ユーザー

変更を適用 更新

特定のユーザーを設定するには、ユーザーIDをクリックします。パスワードポリシーチェックを有効にすると、ユーザー設定を更新する際にパスワード強度がチェックされます。

☐ パスワードポリシーチェックを有効にする

ユーザーID	状態	ユーザー名	ユーザーロール	IPMI LAN 権限	IPMI Serial 権限	Serial Over LAN
1	無効		なし	アドミニストレータ	アドミニストレータ	有効
2	有効	admin	アドミニストレータ	アドミニストレータ	アドミニストレータ	有効
3	有効	ADMIN	アドミニストレータ	アドミニストレータ	アドミニストレータ	有効
4	無効		なし	なし	なし	無効
5	無効		なし	なし	なし	無効
6	無効		なし	なし	なし	無効
7	無効		なし	なし	なし	無効
8	無効		なし	なし	なし	無効
9	無効		なし	なし	なし	無効
10	無効		なし	なし	なし	無効
11	無効		なし	なし	なし	無効
12	無効		なし	なし	なし	無効
13	無効		なし	なし	なし	無効
14	無効		なし	なし	なし	無効
15	無効		なし	なし	なし	無効
16	無効		なし	なし	なし	無効

ようこそ admin (Administrator) ! Wed Oct 10 2018, 17:18:14 (UTC+0000)

Embedded Management Software

サポート ヘルプ 情報 ログアウト

EMS

プロパティ

設定

ネットワーク

セキュリティ

セキュリティ証明書

ユーザー

サービス

IPMI

時刻設定

言語

セッション

LDAP

アップデイト

ユーティリティ

サーバー情報

センサモニター

電源

コントロール

消費電力

システムイベントログ

イベント管理

PEF設定

トラップ設定

メール設定

Serial Over LAN

仮想KVM/メディア

起動

設定

ハードウェア

CPU

メモリ

ストレージ

PSU情報

BBU

システムNIC

ユーザー設定

パスワードポリシー

一般

ユーザー権限

パスワードポリシーチェックが有効

いいえ

5

変更を適用

削除

戻る

ユーザーID

2

ユーザーを有効にする

☒

3

ユーザー名

admin

パスワードを変更する

☒

4

新しいパスワード

パスワードの確認

ユーザー権限

ユーザーロール

アドミニストレータ

IPMI LAN 権限

アドミニストレータ

IPMI Serial 権限

アドミニストレータ

Serial Over LAN を有効にする

☒

ようこそ admin (Administrator) ! Fri Oct 12 2018, 16:04:25 (UTC+0000)

NTP サーバーの設定方法



BMC とシステムの時刻ずれを防ぐため、NTP サーバーの設定を行うことを推奨致します。



ESMPRO/ServerAgentService をご利用の場合、NTP サーバーの設定を行わなくても BMC の時刻は本体装置の OS 時刻と同期されます。

NTP サーバーと BMC の時刻を同期するには以下の手順で設定してください。

- 1 プロパティ→設定→時刻同期をクリックしてください。
- 2 動作モードにデーモンモードを選択してください。
デーモンモードは約 5 分間隔での NTP リクエストを行って時刻の更新を行います。
- 3 NTP サーバー1 に NTP サーバーの IP アドレスを入力してください。
また、NTP サーバー2、NTP サーバー3 を入力することで冗長的に NTP サーバーの接続先を設定できます。
- 4 サーバーのタイムゾーンを選択してください。
- 5 「選択」ボタンを押して、タイムゾーンリストから適切なエリアを選択してください。
UTC の場合は「UTC に設定」ボタンを押してください。
- 6 「変更を適用」ボタンを押してください。

設定を完了後に以下を確認してください。

- 7 正しく時刻が表示されているか確認してください。

- EMS
 - プロパティ
 - 設定
 - ネットワーク
 - セキュリティ
 - セキュリティ証明書
 - ユーザー
 - サービス
 - IPMI
 - 時刻設定**
 - 言語
 - セッション
 - LDAP
 - アップデート
 - ユーティリティ
 - サーバー情報
 - センサーモニター
 - 電源
 - コントロール
 - 消費電力
 - システムイベントログ
 - イベント管理
 - PEF設定
 - トラップ設定
 - メール設定
 - Serial Over LAN
 - 仮想KVM/メディア
 - 起動
 - 設定
 - ハードウェア
 - CPU
 - メモリ
 - ストレージ
 - PSU情報
 - BIOS

時刻設定

時刻を同期 変更を適用 更新

6

このページでNTPとタイムゾーンを設定してください。

Network Time Protocol(NTP)

動作モード	無効
NTPサーバー1	
NTPサーバー2	
NTPサーバー3	
要求モードでの更新間隔 (分)	3
時間同期方法	<input type="radio"/> ステップモード <input checked="" type="radio"/> スルーモード

タイムゾーンの設定

① クライアントタイムゾーンは、クライアントOSのタイムゾーンを修正することで変更できます。

サーバーまたはクライアントのタイムゾーンを使用する	<input checked="" type="radio"/> サーバーのタイムゾーン <input type="radio"/> クライアントタイムゾーン
サーバーのタイムゾーン	UTC
	選択... UTCに設定

7

ようこそ admin (Administrator) ! Thu Feb 14 2019, 10:47:28 (UTC+0000)

タイムゾーンリスト

エリア: アジア
OK
キャンセル

アデン	アルマトウイ	アンマン
アナディル	アクタウ	アクトベ
アシガバート	バグダッド	バーレーン
バクー	バンコク	ベイルート
ビシュケク	ブルネイ	チョイバルサン
重慶	コロンボ	ダマスカス
ダッカ	ディリ	ドバイ
ドウシャンベ	ガザ	ハルビン
ホーチミン	香港	ホブド
イルクーツク	ジャカルタ	ジャヤブラ
エルサレム	カブール	カムチャツカ
カラチ	カシュガル	カトマンズ
コルカタ	クラスノヤルスク	クアラ・ルンブル
クチン	クウェート	マカオ
マガダン	マカッサル	マニラ

時刻の更新間隔を変更する場合は、以下の手順を追加で実施してください。

- 1 動作モードに要求モードを選択してください。
- 2 要求モードでの更新間隔 (分)を設定してください。
- 3 時刻の同期方法にステップモードを選択してください。
- 4 「変更を適用」ボタンを押してください。
- 5 「時刻を同期」ボタンを押すことで、手動で NTP サーバーへ時刻の同期要求を出すことができます。

- EMS
 - プロパティ
 - 設定
 - ネットワーク
 - セキュリティ
 - セキュリティ証明書
 - ユーザー
 - サービス
 - IPMI
 - 時刻設定
 - 言語
 - セッション
 - LDAP
 - アップデート
 - ユーティリティ
- サーバー情報
 - センサーモニター
 - 電源
 - コントロール
 - 消費電力
 - システムイベントログ
 - イベント管理
 - PEF設定
 - トラップ設定
 - メール設定
 - Serial Over LAN
 - 仮想KVM/メディア
 - 起動
 - 設定
- ハードウェア
 - CPU
 - メモリ
 - ストレージ
 - PSU情報
 - GPU

時刻設定



このページでNTPとタイムゾーンを設定してください。

Network Time Protocol(NTP)

動作モード	無効
NTPサーバー1	
NTPサーバー2	
NTPサーバー3	
要求モードでの更新間隔 (分)	3
時間同期方法	ステップモード スルーモード

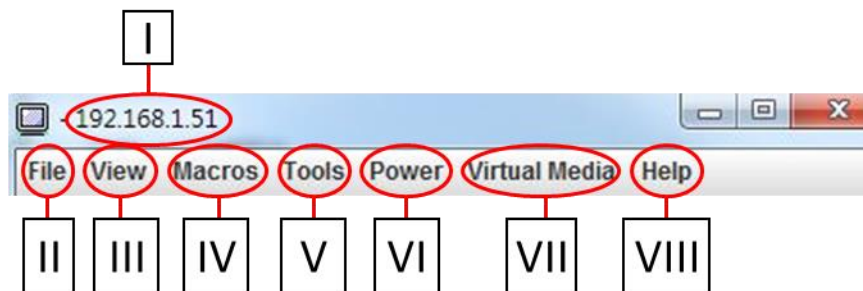
タイムゾーンの設定

① クライアントタイムゾーンは、クライアントOSのタイムゾーンを修正することで変更できます。

サーバーまたはクライアントのタイムゾーンを使用する	
<input checked="" type="radio"/> サーバーのタイムゾーン	<input type="radio"/> クライアントタイムゾーン
サーバーのタイムゾーン	UTC
	選択... UTCに設定

ようこそ admin (Administrator) ! Thu Feb 14 2019, 10:47:28 (UTC+0000)

仮想 KVM/仮想メディア (JAVA 版)



メニュー

- I. ヘッダ
仮想 KVM ビューアのソース IP アドレスを表示します。
- II. File
画面をキャプチャします。
- III. View
ビューアのウインドウサイズを変更します。
- IV. Macros
キーボードショートカット(マクロまたはホットキーのためのマクロ)から選択することで、リモートシステムでマクロを実行します。
- V. Tools
仮想 KVM ビューア設定を制御するためのオプションを利用できます。
- VI. Power
サーバーの電源制御を行います。
- VII. Virtual Media
仮想メディア機能を利用できます。
- VIII. Help
ヘルプ情報を表示します。

仮想 KVM/仮想メディア (HTML5 版)



- 1 仮想 KVM ビューアを切断します。
- 2 全画面を表示します。
- 3 仮想キーボードを表示します。
- 4 画面をリフレッシュします。
- 5 画面をキャプチャします。
- 6 ビューアのウィンドウサイズ変更、キーボードレイアウト設定、マウス設定、サーバーの電源制御に関しての設定があります。
- 7 仮想メディアを有効にします。
- 8 接続しているクライアントにインスタントメッセージを送信します。
- 9 仮想 KVM 接続に関する統計情報を表示します。
- 10 仮想 KVM 接続を使用しているユーザリストを表示します。
- 11 ドロップダウンリストのキーボードショートカット(マクロまたはホットキーのためのマクロ)から選択することで、リモートシステムでマクロを実行します。
- 12 キーボードの CapsLock, NumLock または ScrollLock の状態を表示します。



チェック

サーバーOS、管理 PC、仮想 KVM ビューア(HTML5 版)のキーボードレイアウト設定が同じ言語で統一されていない場合、正常にキー入力を行えません。正常にキー入力を行うには、上記 6 の[Settings]->[Keyboard Language] から<Virtual Keyboard>、<Physical Keyboard>をサーバーOS、管理 PC と同じ言語に設定してください。



ヒント

仮想 KVM ビューア(HTML5 版)の仮想キーボードでは以下のキーはご利用になれません。

- ・ SysRq
- ・ Pause
- ・ Break

仮想 KVM ビューアでこれらのキー入力が必要な場合には、OS が提供するスクリーンキーボード機能をご利用ください。

6. コマンドラインインターフェース

概要

BMC のコマンドラインインターフェースを使用し、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。BMC のコマンドラインインターフェースがサポートしているプロトコルは SSH(バージョン 2)です。



本章に記載していない操作はサポート対象外です。予期せぬ結果が生じる可能性があるため、実施しないでください。

接続方法

管理 PC 上の SSH クライアントで BMC の IP アドレスまたは DNS ホスト名に接続を行ってください。



SSH 接続で使用するポート番号は 22 となっております。



SSH を使用した接続を行う場合、サーバー証明書に関するセキュリティ警告が表示される場合があります。

ログイン・ログアウト

ログイン

ログインプロンプトが表示されたらユーザー名/パスワードを入力してください。
ログインに成功すると、コマンドプロンプトが表示されます。



ユーザーアカウントは Web ブラウザーを使用したリモート
マネージメント機能と共通です。



コマンドラインインターフェースを使用して、同時にログインできる
ユーザーは最大 4 ユーザーです。他の SSH クライアントから既に 4 ユー
ザーログインしていると、新たにログインすることはできません。
ログインできない場合は他の SSH クライアントからログインしている
ユーザーの人数を確認してください。

ログアウト

コマンドプロンプトで exit コマンドを入力してください。ログアウトを行うと BMC との接
続は切断されます。

基本コマンド

ここでは、コマンドラインインターフェースで使用する基本コマンドを説明します。これら基本コマンドは DMTF(Distributed Management Task Force)で提唱している、コマンド(verb)とターゲット(管理対象)の概念を用いてシステム管理を行います。

各コマンドは指定されたターゲットに対して機能します。ターゲットはファイルシステムのファイルへのパス名に似た表記で管理対象を表します。また、絶対(先頭に"/" を付けた指定)と相対、両方のパス指定が可能であり、"." は現在のターゲットを示し、".." は親のターゲットを示します。

各基本コマンドで<target>を省略した場合は現在のデフォルトターゲットに対して機能します。現在のデフォルトターゲットは cd コマンドで変更できます。コマンドラインインターフェースのセッション開始時(ログイン時)の現在のデフォルトターゲットは"/admin1"です。

現在のデフォルトターゲットは、コマンドプロンプト("->")の左側に表示されます。

各コマンドの<options>に -h を指定した場合は、各コマンドのヘルプ(構文)が表示されます。

また、以下の説明で、[] で示されている引数は省略可能です。



チェック

基本コマンドを実行するためには、ログインしたユーザーのユーザーレベルに、以下のユーザー権限が必要です。

- ・ cd, exit, help, show, version は 全てのユーザー権限で利用できます。
- ・ stop, start, reset は Operator または、Administrator 権限が必要です。
- ・ set は Administrator 権限が必要です。

cd

構文:

cd [<options>] [<target>]

説明:

現在のデフォルトターゲットを<target>の指定に変更します。

exit

構文:

exit [<options>]

説明:

ターミナルを切断しログアウトします。

help

構文:

help [<options>] [<help topics>]

説明:

<help topics>には基本コマンド(<command>)が指定可能です。<command> を指定した場合は、基本コマンドのヘルプを表示します。

reset

構文:

reset [<options>] [<target>]

説明:

<target>に対してリセットを行います。<target>には/admin1/system1 が指定可能です。<target>として、/admin1/system1 を指定した場合は、サーバーのシステムリセットを行います。

set

構文:

set [<options>] [<target>] <propertyname>=<value>

説明:

本コマンドは、<target>で指定したターゲットの一つ以上のプロパティを設定します。本コマンドは、設定を行う、<target>と、複数の連なった<propertyname>=<value>の組を引数として受け付けます。<propertyname>は設定するプロパティ名を指定し、<value>には設定する新しい値を指定します。(<propertyname>=<value>の組の記述はそれぞれの組の間をスペースで区切って複数指定可能です。)

本コマンドは、-h を<options>に指定しているとき以外は、コマンドラインで引数<propertyname>=<value>が必須です。

show

構文:

show [<options>] [<target>] [<properties>]

説明:

本コマンドは、<target>で指定したターゲットに関する情報を表示します。本コマンドで最初に表示される行は指定したターゲットを示します。<target>が省略された場合は、現在のデフォルトターゲットを最初の行に表示します。ここで、デフォルトの表示では、Targets 文字列の後に、指定したターゲットが持つ他の(配下の)ターゲットを表示し、Properties 文字列の後には、指定したターゲットがもつプロパティを property=value 形式で表示します。更に、Verbs 文字列の後には、指定したターゲットで実行可能な基本コマンド(verb)と特殊拡張コマンドを表示します。本コマンドに <properties> を指定した場合は、指定したプロパティを property=value 形式で表示します。<properties>を指

定しなかった場合は含まれている全てのプロパティを表示します。

<options>に指定可能な、本コマンド固有のオプションとしては -display <arg values>があります。このオプションは、ターゲットに関して表示する情報の種類を指定します。ここで有効な <arg values> は "targets"、"properties"、"verbs"、そして、"all" です。これらは、それぞれ上記 Targets、Properties、Verbs の表示を選択できます。"all"は全てを表示します。デフォルトは"all"です。



サーバーの構成によってはターゲットに関する表示に 1 分程度の時間が掛かる場合があります。

start

構文:

start [<options>] [<target>]

説明:

本コマンドの<target>には /system1 が指定可能です。/system1 を指定した場合はサーバーの電源 ON を行います。

stop

構文:

stop [<options>] [<target>]

説明:

本コマンドは、電源 OFF 指示(OS Shutdown 要求)または、 強制電源 OFF を行います。<target>には/system1 が有効で、サーバーの電源 OFF 指示(OS Shutdown 要求)を行います。<options>に -f(または-force) を指定した場合は、サーバーの強制電源 OFF を行います。<options>に -w を指定した場合は、サーバーの 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)を行います。

version

構文:

version [<options>]

説明:

サポートしているコマンドラインプロトコル仕様の version を表示します。

リモート制御

コマンドプロンプトから装置のリモート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。



リモート制御を行うには Operator または Administrator 権限が必要です。

電源 ON

コマンドプロンプトから以下のコマンドを入力してください。

```
start system1
```

強制電源 OFF

コマンドプロンプトから以下のコマンドを入力してください。

```
stop -force system1
```

または

```
stop -f system1
```

OS シャットダウン

コマンドプロンプトから以下のコマンドを入力してください。

```
stop system1
```



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。

システムリセット

コマンドプロンプトから以下のコマンドを入力してください。

```
reset system1
```



電源 OFF 状態で本操作を行うことはできません。

OS ダンプ用割り込み

コマンドプロンプトから以下のコマンドを入力することによりサーバーに OS のメモリダンプを行います。

```
stop -w system1
```



stop -w system1 を実行するためには Operator または Administrator 権限が必要です。

ユーザー設定

ここでは、コマンドラインインターフェース経由でのユーザー設定の表示・修正手順を示します。

コマンドプロンプトから以下のコマンドを入力して、ユーザアカウント設定を表示または修正したいユーザーアカウントに現在のカレントターゲットを移動します。以下で account<N> の<N>は 1 から 16 の整数で、account1 から account16 が指定可能です。この<N>は、Web ブラウザー経由で行うユーザーアカウントの設定画面で上からの順番に対応しています。

```
cd system1/sp1/account<N>
```

選択したユーザーがプロパティとして持っている設定を表示する場合は、以下のコマンドを実行します。

```
show
```

選択したユーザーを有効にする場合は、以下のコマンドを実行します。

```
start system1/sp1/account<N>
```

選択したユーザーを無効にする場合は、以下のコマンドを実行します。

```
stop system1/sp1/account<N>
```

設定を変更する場合は以下のコマンドを実行します。

```
set <Property>=<New value>
```

選択されたユーザーが持っているプロパティは以下になります。

- **UserID**

ユーザー名を示します。コマンドラインインターフェースからは変更できません。

- **UserPassword**

ユーザーのパスワードを示します。show コマンドでは "UserPassword=NULL" として表示され、設定値は表示されません。変更時、この設定は次回ログイン時に有効になります。



パスワードには 20 文字以内の半角英数字および記号を指定してください。

ネットワーク設定

マネージメント専用 LAN のイーサネットポート設定の表示手順を示します。イーサネットポートを選択するため、コマンドプロンプトから以下のコマンドを入力して、現在のデフォルトターゲットを、/admin1/system1/sp1/enetport1 に移動します。

```
cd system1/sp1/enetport1
```

イーサネットポートのプロパティとして持っている設定を表示する場合は、以下のコマンドを実行します。

```
show
```

表示可能なイーサネットポートのプロパティは以下になります。

- **PermanentAddress**

BMC の MAC アドレスを "PermanentAddress=" 文字列の右側に表示します。

DHCP 設定を行うためには、コマンドプロンプトから以下のコマンドを入力して、デフォルトターゲットを、/admin1/system1/sp1/ipendpt1 に移動します。

```
cd system1/sp1/ipendpt1
```

DHCP のプロパティとして持っている設定を表示する場合は、以下のコマンドを実行します。

```
show
```

表示可能な DHCP 関係のプロパティは以下になります。

- **AddressOrigin**

ネットワークに対して DHCP を無効(3)にするか有効(4)にするかを表示します。

ゲートウェイ設定表示を行うためには、コマンドプロンプトから以下のコマンドを入力して、デフォルトターゲットを /admin1/system1/sp1/remotesap1 に移動します。

```
cd system1/sp1/remotesap1
```

ネットワークのプロパティとして持っている設定を表示する場合は、以下のコマンドを実行します。

```
show
```

表示可能なゲートウェイのプロパティは以下になります。

- **InfoFormat**

" InfoFormat=3" が表示され、IPv4 アドレスであることを示します。

- **AccessInfo**

ネットワークのデフォルトゲートウェイの IP アドレスを表示します。

DHCP 無効時のネットワーク設定を行うためには、コマンドプロンプトから以下のコマンドを入力して、デフォルトターゲットを/admin1/system1/settings1/staticipsettings1 に移動します。

```
cd system1/setting1/staticipsettings1
```

ネットワーク設定のプロパティとして持っている設定を表示する場合は、以下のコマンドを実行します。

```
show
```

表示可能なネットワーク設定のプロパティは以下です。

- **IPv4Address**
DHCP 無効時の BMC の IP アドレスを表示します。
- **SubnetMask**
DHCP 無効時の BMC のサブネットマスクを表示します。

システム情報の確認

ここでは、コマンドラインインターフェース経由でのシステム情報 (CPU、メモリ) の確認手順を示します。



システム情報に関するプロパティの値に関して、サーバーでサポートしていない項目の値は表示されません。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プロパティの値が表示されない場合があります。

CPU 情報の確認

コマンドプロンプトから以下のコマンドを入力して、現在のデフォルトターゲットを/admin1/system1 に移動します。

```
cd /admin1/system1
```

ここで、以下のコマンドを入力すると CPU の全てのターゲットが確認できます。CPU のターゲットは Targets の項目に cpu<N> として表示されます。<N>は 1 から始まる整数です。

```
show
```

次に、以下のコマンドを入力すると、指定した CPU ターゲットの情報を Properties の項目に表示します。ここで、<N>は表示を希望する CPU ターゲットの番号を指定してください。

```
show cpu<N>
```

CPU ターゲットの情報で EnabledState プロパティの値が"2"の場合は CPU 実装、"3"の場合

は CPU 無効を示します。未実装の場合は、target として表示されません。なお、EnabledState プロパティの値が"3"の場合、各プロパティの値は無効なデータとなります。

例えば、CPU#1 の情報を表示する場合は以下のコマンドを入力します。

```
show cpu1
```

この場合の表示例を以下に示します。

```
/admin1/system1/cpu1
properties
    CPUStatus = 1 (CPU Enabled)
    CurrentClockSpeed = 1800
    ElementName = Intel(R) Genuine processor
    EnabledState = 2 (Enabled)
    ExternalBusClockSpeed = 100
    Family = 179 (Intel(R) Xeon(TM))
    HealthState = 5 (OK)
    MaxClockSpeed = 4000
    OperationalStatus =
        {
            2 (OK)
        }
    RequestedState = 12 (Not Applicable)

verbs
    show
    exit
    help
    ersion
```

メモリ情報の確認

コマンドプロンプトから以下のコマンドを入力して、現在のデフォルトターゲットを /admin1/system1 に移動します。

```
cd /admin1/system1
```

ここで、以下のコマンドを入力するとメモリ(DIMM)の全てのターゲットが確認できます。全てメモリ(DIMM)の情報は memory1 として表示されます。

```
show
```

次に、以下のコマンドを入力すると、メモリ(DIMM)の情報を Properties の項目に表示します。メモリ(DIMM)ターゲットの情報で EnabledState プロパティの値が"2"の場合はメモリ(DIMM)実装、"3"の場合はメモリ(DIMM)無効を示します。未実装の場合は、target として表示されません。

```
show memory1
```

この場合の表示例を以下に示します。

```
/admin1/system1/memory1
properties
    Access = 3 (Read/Write Supported)
    BlockSize = 1048576
    ConsumableBlocks = 524288
    ElementName = sm1
    EnabledState = 2 (Enabled)
    HealthState = 5 (OK)
    NumberOfBlocks = 24576
    OperationalStatus =
        {
            2 (OK)
        }
    RequestedState = 12 (Not Applicable)
    Volatile = true
verbs
    show
    exit
    help
    version
```

7. WS-Management (Web Service for Management).

概要

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

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、以下のよう実行してください。

```
winrm invoke RequestPowerStateChange
"cimv2/CIM_PowerManagementService?Name=PowerManagementService
+CreationClassName=CIM_PowerManagementService
+SystemName=SYSTEMNAME
+SystemCreationClassName=CIM_UnitaryComputerSystem" -r:http://
IP_ADDRESS:5985/wsman -a:digest -u: USERNAME -p: PASSWORD
-encoding:utf-8 -format:xml -file:input-RequestPowerStateChange2.xml
```

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-s
chema/2/CIM_ComputerSystem</wsman:ResourceURI>
    </wsa:ReferenceParameters>
  </n1:ManagedElement>
</n1:RequestPowerStateChange_INPUT>
```



ヒント

以下の設定を変更してください。

“IP_ADDRESS”：BMC 管理コンソールの IP アドレス。

“USERNAME/PASSWORD”：BMC 管理コンソール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。

“SYSTEMNAME”：下記の手順で表示される値を指定してください。

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 = IPMI Controller 32)



ヒント

HTTPS で接続する場合は、ポート番号を 5985 から 5986 に変更し、以下の
オプションを追加してください。

-skipCNcheck

-skipCAcheck

-skipRevocationcheck

¹ winrm e cimv2/CIM_PowerManagementService -r:http://IP_ADDRESS:5985/wsman
-a:Digest -u:USERNAME -p:PASSWORD -encoding:utf-8

強制電源 OFF

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

```
winrm invoke RequestPowerStateChange
"cimv2/CIM_PowerManagementService?Name=PowerManagementService
+CreationClassName=CIM_PowerManagementService
+SystemName=SYSTEMNAME
+SystemCreationClassName=CIM_UnitaryComputerSystem" -r:http://
IP_ADDRESS:5985/wsman -a:digest -u: USERNAME -p: PASSWORD
-encoding:utf-8 -format:xml -file:input-RequestPowerStateChange6.xml
```

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-s
chema/2/CIM_ComputerSystem</wsman:ResourceURI>
    </wsa:ReferenceParameters>
  </n1:ManagedElement>
</n1:RequestPowerStateChange_INPUT>
```



以下の設定を変更してください。

“IP_ADDRESS” : BMC 管理コンソールの IP アドレス。

“USERNAME/PASSWORD” : BMC 管理コンソール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。

“SYSTEMNAME” : 下記の手順で表示される値を指定してください。

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 = IPMI Controller 32)



HTTPS で接続する場合は、ポート番号を 5985 から 5986 に変更し、以下の
オプションを追加してください。

```
-skipCNcheck
-skipCAcheck
```

² winrm e cimv2/CIM_PowerManagementService -r:http://IP_ADDRESS:5985/wsman
-a:Digest -u:USERNAME -p:PASSWORD -encoding:utf-8

|

-skipRevocationcheck

パワーサイクル

WinRM を使用する場合、ファイル input-RequestPowerStateChange5.xml を作成し、以下のよう実行してください。

```
winrm invoke RequestPowerStateChange
"cimv2/CIM_PowerManagementService?Name=PowerManagementService
+CreationClassName=CIM_PowerManagementService +SystemName=SYSTEMNAME
+SystemCreationClassName=CIM_UnitaryComputerSystem"-r:https://IP_ADDRESS/ws
man -username:USERNAME -password:PASSWORD -auth:basic -encoding:utf-8
-format:xml -file:input-RequestPowerStateChange5.xml
```

input-RequestPowerStateChange5.xml

```
<n1:RequestPowerStateChange_INPUT
xmlns:n1="http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/CIM_Power
ManagementService"
xmlns:wsa="http://schemas.xmlsoap.org/ws/2004/08/addressing"
xmlns:wsman="http://schemas.dmtf.org/wbem/wsman/1/wsman.xsd">
<n1:PowerState>5</n1:PowerState>
<n1:ManagedElement>
<wsa:ReferenceParameters>
<wsman:ResourceURI>http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/
CIM_ComputerSystem</wsman:ResourceURI>
</wsa:ReferenceParameters>
</n1:ManagedElement>
</n1:RequestPowerStateChange_INPUT>
```



以下の設定を変更してください。

“IP_ADDRESS” : BMC 管理コンソールの IP アドレス。

“USERNAME/PASSWORD” : BMC 管理コンソール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。

“SYSTEMNAME” : 下記の手順で表示される値を指定してください。

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 = IPMI Controller 32)



HTTPS で接続する場合は、ポート番号を 5985 から 5986 に変更し、以下の
オプションを追加してください。

```
-skipCNcheck
-skipCAcheck
-skipRevocationcheck
```

³ winrm e cimv2/CIM_PowerManagementService -r:http://IP_ADDRESS:5985/wsman
-a:Digest -u:USERNAME -p:PASSWORD -encoding:utf-8

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 e cimv2/CIM_NumericSensor -r:http://IP_ADDRESS:5985/wsman  
-a:Digest -u:USERNAME -p:PASSWORD -encoding:utf-8
```

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

```
winrm e cimv2/CIM_Sensor -r:http://IP_ADDRESS:5985/wsman -a:Digest  
-u:USERNAME -p:PASSWORD -encoding:utf-8
```



以下の設定を変更してください。

“IP_ADDRESS” : BMC 管理コンソールの IP アドレス。

“USERNAME/PASSWORD”: BMC 管理コンソール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。



HTTPS で接続する場合は、ポート番号を 5985 から 5986 に変更し、以下の
オプションを追加してください。

-skipCNcheck

-skipCAcheck

-skipRevocationcheck

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 43h 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 g "cimv2/CIM_NumericSensor?CreationClassName=CIM_NumericSensor  
+SystemCreationClassName=CIM_ComputerSystem +SystemName=SYSTEMNAME  
+DeviceID=1.67.0.32.1.99" -r:http://IP_ADDRESS:5985/wsman -a:Digest -u:USERNAME  
-p:PASSWORD -encoding:utf-8
```



HTTPS で接続する場合は、ポート番号を 5985 から 5986 に変更し、以下の
オプションを追加してください。

-skipCNcheck

-skipCAcheck

-skipRevocationcheck



以下の設定を変更してください。

“IP_ADDRESS” : BMC 管理コンソールの IP アドレス。

“USERNAME/PASSWORD” : BMC 管理コンソール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。

“SYSTEMNAME” : 下記の手順で表示される値を指定してください。

WinRM で CIM_Sensor 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= srv:20010419020F0A3C000A010000000000)



センサー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。

⁴ " winrm e cimv2/CIM_Sensor -r:http://IP_ADDRESS:5985/wsman -a:Digest -u:USERNAME -p:PASSWORD -encoding:utf-8"

8. トラブルシューティング

エラーメッセージ

リモートマネージメントを使用している際に、何らかの異常が発生して管理 PC 上にエラーダイアログが表示される場合があります。主なメッセージとそれに対する対処方法は以下を参照ください。

ログイン時のエラー

項番	エラーメッセージ	対処方法
1	ログインは禁止されています。このユーザーは既にログインしています。同じブラウザで別のタブやウィンドウでログインすることは禁止されています。	同じブラウザの別のタブやウィンドウでログインしていないか確認し、ブラウザを再起動してください。 効果が無い場合は本体装置の BMC RESET スイッチを押して 3 分待ってから再接続してください。

Java 仮想 KVM ビューア起動時のエラー

項番	エラーメッセージ	対処方法
1	The viewer has terminated. Reason: The network connection has been dropped.	同じブラウザの別のタブやウィンドウでログインしていないか確認し、ブラウザを再起動してください。 効果が無い場合は本体装置の BMC RESET スイッチを押して 3 分待ってから再接続してください。

HTML5 仮想 KVM ビューア起動時のエラー

項番	エラーメッセージ	対処方法
1	The session has timed out waiting for verification of the certificate. All the connections will be closed.	3 章「管理 PC 側の設定」を参照して、ポップアップを常に許可するように設定を行ってください。

機能使用時の注意

❓ BMC 管理コンソールに接続できない。

- ☐ BMC と管理 PC のネットワーク設定を再確認してください。
- ☐ 設定に問題がない場合は Web ブラウザーを再起動してください。
- ☐ 上記の手順で解決しない場合、本体装置の BMC RESET スイッチを押して 3 分待ってから再接続してください。

❓ 仮想 KVM ビューアを起動できない。あるいは仮想 KVM ビューアが正常に動作しない。

- ☐ BMC と管理 PC のネットワーク設定を再確認してください。
- ☐ 設定に問題がない場合は Web ブラウザーを再起動してください。
- ☐ 上記の手順で解決しない場合、以下のいずれかの手順を実施してください。
 - 本体装置の BMC RESET スイッチを押すか、BMC 管理コンソールから BMC リブートを行ってください。その後 3 分待ってから再接続してください。
 - 本体装置を再起動してください。

❓ 本体装置起動時に BMC のネットワーク接続が切断される。

共有(NCSI)を設定した場合には、本体装置の起動時にサーバーLAN ポートが初期化されるため、一時的にネットワーク接続が切断されます。

❓ BMC の時刻がシステムの時刻と一致しない。

- ☐ NTP が利用出来ない環境では NTP を無効に設定してください。

❓ BMC のメモリ情報で最大容量と実際の搭載可能容量が一致しない。

- ☐ 最大容量には CPU がサポートする最大容量が表示されます。
- ☐ ソケット数の制限等により実際の搭載可能容量は表示される最大容量よりも小さい場合があります。

❓ 消費電力設定を行っていないのに本体装置の Power Capping ランプ(P.CAP)が点灯または点滅する。

- ☐ ESMPRO/Server Manager やオフラインツールの Server Configuration Utility で ECO 設定を行っていないか確認してください。

❓ システムイベントログでの BMC システムイベントログ表示で重要度に「？」と表示されるイベントがある。

- ☐ システムイベントログを確認するには、ESMPRO/Server Manager、Ezclct Viewer、オフラインツールの Maintenance Utility をご利用ください。

その他注意事項

本機能を用いた仮想KVMビューア操作・監視・管理ができない場合は、修理に出す前にオンラインヘルプの注意事項やトラブルシュートをチェックしてください。各項目にある症状に当てはまるものがあるときは、その後の確認、処理に従ってください。尚、システム全般におけるトラブルにつきましては、サーバーに添付のユーザーズガイドを参照してください。

該当する項目がない場合や、「対策」を行っても症状が改善しない場合は、保守サービス会社に連絡してください。

ライセンスについて

本製品は下記のオープンソースソフトウェアを利用しています。

GNU General Public License v2

- Busybox
- Linux Kernel
- U-Boot
- Gcc_tools
- Glibc
- Dosfstools
- Ethtool
- Iproute2
- Iptables
- iputils
- Rng-tools

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Uriparser

uriparser - RFC 3986 URI parsing library

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zlib

/* zlib.h -- interface of the 'zlib' general purpose compression library
version 1.2.11, January 15th, 2017

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*/

ISC

DHCP

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